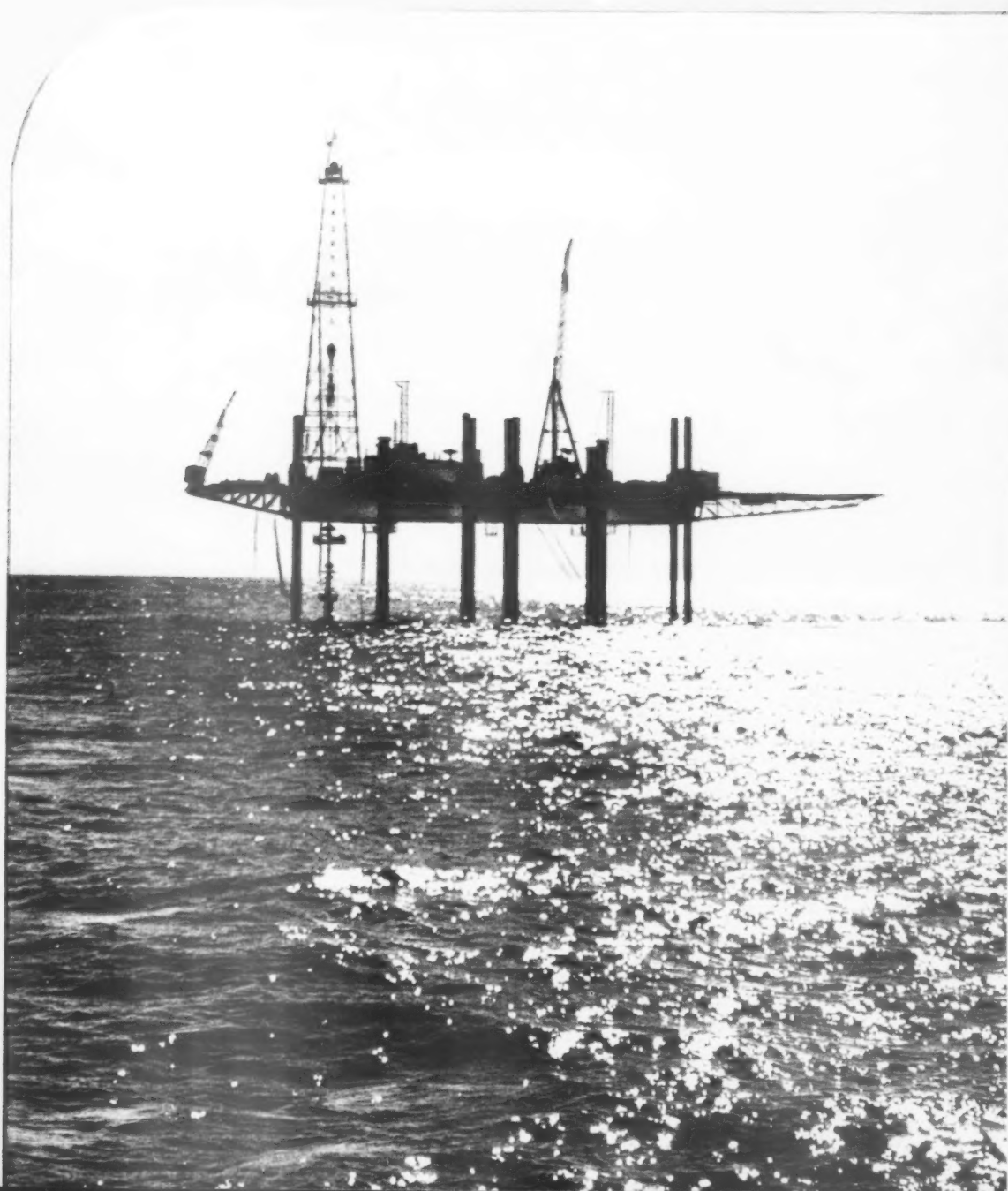


AMERICAN GAS ASSOCIATION

Monthly



AUGUST
1958

A.G.A.

proudly announces

A new type of informational gas utilization
exhibit at the Atlantic City Convention Hall
October 12-15, 1958

featuring

1. Parade of manufacturer displays of new and significant technical developments in gas utilization, including—
 - gas air conditioners
 - gas refrigerators
 - smokeless, odorless gas incinerators
 - school room heaters
 - other new developments in domestic, commercial and industrial gas appliances
2. Parade of Gas Industry Research
3. The dramatic new All-Gas Multimatic Wall
4. Parade of New Freedom Gas Kitchens and Laundries

The "Parade of Gas Progress" will be open from Noon to 6 P.M., October 12 to 15, to all delegates to the 1958 A. G. A. Convention. Bring your builders, architects, public health authorities, dealers and all others vitally interested in what is new and significant in gas utilization.

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Drilling rig in the continental shelf seeks gas and oil treasure greater than any pirate's dream

DELEGATES attending the 40th annual A. G. A. convention in Atlantic City Oct. 13-15 will see the most significant new developments in gas appliances and utilization technology of the past two years. The first gas appliance exhibit at an A. G. A. convention since 1952 is called the "Parade of Gas Progress." In addition, there will be a "Parade of Gas Research" and a "Parade of New Freedom Gas Kitchens and Laundries." Each phase of the convention will dramatize the convention theme, "Gas Builds A Greater America." Details begin on page 2. . . . J. Theodore Wolfe, nominee for 1958-59 A. G. A. president, heads a list of 30 gas industry men nominated for officers and directors for the coming year. A report on nominations begins on page 6. . . . Recognition again is given this month to the companies who support the gas industry's PAR Plan. These companies, listed on pages 14 and 15, are the ones who are contributing some \$3.6 million dollars this year for the industry's promotion, advertising, research, and public information programs. . . . The gas industry is well represented at the World's Fair in Brussels. See page 19. . . . What A. G. A. is doing in research is told by T. L. Robey, A. G. A. director of research, in his annual report on page 20.

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WALTER H. DYER
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CONTENTS FOR JULY-AUGUST 1958

FEATURES

GAS BUILDS A GREATER AMERICA	2
A. G. A. NOMINATES FOR 1958-1959	6
RECORD TURNOUT FOR COAST MEETING	10
MAKING PAR POSSIBLE	14
TWO RESEARCH BULLETINS PUBLISHED	16
GAS PAVILION NOW ON VIEW IN BRUSSELS	19
RESEARCH IN REVIEW—by T. L. Robey	20
SAFETY MEN STRESS OPERATING ROLE	27

SECTIONS

THERE'S A HOLE IN YOUR POCKET (Accounting)—by Claude F. Wahli	29
ECONOMIC CHALLENGE IS HURDLED (General Management) . . .	31
NATURAL GAS REDUCES IRON ORE DIRECTLY (Industrial and Commercial)	33
THE GULF GIVES UP ITS TREASURE (Operating)	36
ALL-GAS HOME MODELED AFTER JAPANESE DESIGN (Residential) .	42

DEPARTMENTS

INDUSTRIAL RELATIONS ROUND-TABLE	9
FACTS AND FIGURES	13
MEET YOUR ASSOCIATION STAFF	30
INDUSTRY NEWS	44
HIGHLIGHTS OF CASES BEFORE FPC	48
A. G. A. ANNOUNCES NEW PUBLICATIONS	50
NEW A. G. A. MEMBERS	51
PERSONAL AND OTHERWISE	52
OBITUARY	53
CONVENTION CALENDAR	55
PERSONNEL SERVICE	56

INDEXED BY APPLIED SCIENCE AND TECHNOLOGY INDEX
(FORMERLY INDUSTRIAL ARTS INDEX)

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GAS BUILDS



Speaker J. W. McAfee is past president of Edison Electric Institute



"Myths, Management, and Money" is title of talk by J. C. Bevis



NARUC Pres. Edward R. Thornton will present commissions' views



James J. Healy, authority on labor-management relations, will speak



A. G. A. PRESIDENT ROBERT W. OTTO



Economic trends will be discussed by M. R. Gainsbrugh, economist



Speaker Albert H. Gordon will give address on financial situation

Leading men in all fields affecting gas industry have been selected to

One of the most important years in the history of the gas industry will be climaxed Oct. 13-15 in Atlantic City when some 5,000 gas leaders convene for the 40th annual American Gas Association convention.

For the first time since 1952, the convention will be highlighted by a gas appliance exhibit in the Atlantic City Convention Hall. The exhibit, named the "Parade of Gas Progress," will be a new and dramatic type of exhibition. It will include not only significant new developments in gas appliance and utilization technology of the past two years, but also a "Parade of Gas Research" and a glamorous "Parade of New Freedom Gas Kitchens and Laundries."

Each phase of the 1958 convention—utilization exhibits, general sessions, luncheons and section meetings—will dramatize the convention theme, "Gas Builds A Greater America."

All general session speakers have been chosen, according to A. M. Beebee, chairman of the General Convention Planning Committee, and chairman of the Executive Committee, Rochester Gas and Electric Corp., Rochester, N. Y.

More than 40 significant technical developments in gas utilization have been lined up for the "Parade of Gas Progress," in the Atlantic City Convention Hall. Other developments are expected to be selected within the next few weeks.

GREATER AMERICA



Luncheon speaker Glenn W. Clark is presidential nominee of INGAA



Industry progress in refrigeration is subject of Elisha Gray II



GAMA President C. V. Coons will tell how sales can be increased



A. M. Beebe is chairman of General Convention Planning Committee



A. G. A.'s managing director, C. S. Stackpole, will speak at luncheon



Topic of W. M. Jacobs will be latest developments in gas industry



Chairman of Convention Entertainment Committee is Hugh L. Wathen

American Gas Association 40th annual convention, Oct. 13-15 in Atlantic City

Ten magazine-designed New Freedom Gas Kitchens and Laundries and the new all-gas Multimatic Wall which already has claimed national attention will be on display.

The over-all theme, "Gas Builds A Greater America," will be pointed up by individual themes for each session. General session themes will be: "What's Ahead," "Problems to Think About," and "Meeting Our Opportunities." The theme of the general luncheon, climax of the convention, will be "A Time for Greatness—Making the Most of Our Opportunities."

General sessions will open each day of the convention at 9:45 a.m.

First speaker will be A. G. A. President Robert W. Otto who will speak on "Gas Builds A Greater America." Besides outlining our contributions to the American public, Mr. Otto also will give an up-to-the-minute report on the industry's rapid growth and prospects for future progress.

The second speaker on the opening session's "What's Ahead" program will be Martin R. Gainsbrugh, chief economist, National Industrial Conference Board, New York City. Mr. Gainsbrugh will describe current economic trends and their significance.

Fulton Lewis, Jr., Mutual Broadcasting System news commentator, will be the third speaker on Monday morning.

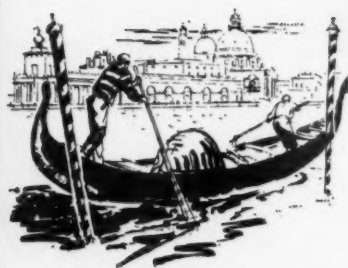
You Are Cordially Invited....

To the President's Reception and Gala

Monday evening, Oct. 13, 8:30 p.m.

Come join us for this grand salute to President Robert W. Otto. There will be entertainment by some of America's top talent and dancing in the famous Atlantic City Auditorium-Ballroom.

There'll be table service for your pleasure—a convenient way for guests to form congenial groups for a pleasant evening.



To the Ladies Luncheon and Style Show

Tuesday afternoon, Oct. 14, 1:00 p.m.

Following a continental luncheon, ladies will have the opportunity to see the wonderful creations of leading Italian couturiers. Fabulous furs, daytime and evening clothes, will be shown amidst Italian decor in the beautiful Renaissance Room of the Hotel Ambassador.

James J. Healy, associate professor of Industrial Relations, Graduate School of Business Administration, Harvard University, will be the final speaker at the first general session. His topic will be "What Is Ahead in Labor-Management Relations." Professor Healy, a nationally known authority in labor-management relations, will discuss current developments and draw conclusions as to the likely shape of the future as indicated by present trends.

The Oct. 14 general session will present four outstanding speakers who will give delegates some "Problems to Think About," theme of the second day's program. The program will open with the presentation of the A. G. A. Distinguished Service Award.

Leading off will be J. W. McAfee, president, Union Electric Co., St. Louis, and a past president of Edison Electric Institute. Mr. McAfee, a former judge of the Circuit Court in St. Louis, will discuss "The Threat of Government Operation—Our Common Problem."

Joseph C. Bevis, president, Opinion Research Corp., Princeton, N. J., will then talk on "Myths, Management and Money." He will point out misconceptions about business, including the gas industry, that affect the freedom with which management can manage and the degree of support that the

businessman gets from the public, employees, thought leaders and others. He believes that better public understanding of our economic system and of the gas industry can mean a better balance sheet and a larger profit.

Edward R. Thornton, president, National Association of Railroad and Utilities Commissioners, will give gas leaders a two-way look at some current problems, not only of gas utilities with commissions, but also of commissions with gas utilities.

"Financing Economics of Today" will be the subject of a talk by Albert H. Gordon, partner, Kidder, Peabody & Co., New York City. Mr. Gordon is a well known authority on finance, and his address on the financial situation should be enlightening.

The third general session will open with a brief ceremony in honor of the affiliated gas associations.

The first speaker on this "Meeting Our Opportunities" session will be Elisha Gray II, chairman, Whirlpool Corp. Mr. Gray's topic will be "Refrigeration—Key to Greater Sales." He will discuss industry progress made in refrigeration, and will give a detailed discussion as to Whirlpool's plans and hopes for the future in gas refrigeration.

Lyle C. Harvey, senior vice-president, Carrier Corp., will

suggest means for advancing our position in the field of air conditioning.

The "Five High Roads to Sales Expansion" will be described by Clifford V. Coons, executive vice-president, Rheem Manufacturing Co., and president, Gas Appliance Manufacturers Association. Mr. Coons, whose talk follows discussions on gas air conditioning and gas refrigeration, will devote his remarks largely to the other five major domestic gas uses: water heating, cooking, house heating, incineration, and clothes drying. He will give his views on practical ways to expand our business through more sales in these five areas.

The final general sessions speaker will be W. M. Jacobs, vice-president, Pacific Lighting Corp., and chairman, A. G. A. Gas Industry Development Committee. He will describe the latest developments in the gas industry.

The luncheon at noon Wednesday will be held in the Hotel Traymore. President Otto will preside and will introduce the speakers, Glenn W. Clark, presidential nominee of the Independent Natural Gas Association of America, and C. S. Stackpole, A. G. A. managing director.

Mr. Clark, president of Mississippi River Fuel Corp., St. Louis, will tell what pipeliners can do to help build a greater America. His topic will be "A Time for Greatness."

Mr. Stackpole has chosen as his topic, "Making the Most of Our Opportunities." He will discuss what the industry can and should do to make the most of our opportunities.

Nine types of achievement awards will be presented during the convention. Awards to be made are the Distribution Achievement Award, the Beal Medal for the best technical paper presented at an A. G. A. meeting during the year, the Operating Section Award of Merit, the Distinguished Service Award, the Order of Accounting Merit, the Safety Achievement Award, the A. G. A. Home Service Achievement Award sponsored by *McCall's* Magazine, the Industrial and Commercial Achievement Award, and the Public Relations Achievement Award.

The "Parade of Gas Progress" will be educational rather than promotional, according to H. Vinton Potter, chairman of the A. G. A. Exhibit Planning Committee, and vice-president, Oklahoma Natural Gas Co. The exhibit will be devoted to gas utilization items which have become commercially available since October 1956, or soon to become commercially available, and to prototypes of important new gas utilization devices still under development. Participation is by invitation from the committee.

Thirty manufacturers already have signed up to show their new technical developments and many others are expected to sign up for the Parade of Gas Progress soon.

The Parade of Gas Research phase will show how projects are born and developed in the laboratory. The manufacturers' displays will show how these ideas are carried to the customer. The exhibit will be open Sunday through Wednesday, Oct. 12-15, from noon until 6 p.m.

Some of the technical developments on display will include: residential and commercial gas air conditioning, gas refrigeration, new gas range broilers using the Schwank burner, a remote control push-button gas range, new type top burner controls, fold down gas burners, new meat thermometer, gas lamps, school room heaters, new smokeless-odorless gas incinerators, high speed gas burners for hotel and restaurant ranges, and other new significant developments in domestic, commercial and industrial equipment.

The thirty-one companies signed up to exhibit in the Parade of Gas Progress thus far include the following:

American Air Filter Co.; Arkla Air Conditioning Corp.; Bowser, Inc., Incineration Div.; Calcinator Corp.; Caloric Appliance Corp.; Carrier Corp.; Christiansen Co.; H. D. Conkey and Co., Field Control Div.; Dixie Products, Inc.; Equitable Gas Co.; Gifford-Wood Co.; Hardwick Stove Co.; Harper-Wyman Co.; W. L. Jackson Manufacturing Co.; Jet-Heet, Inc.; Locke Stove Co.; The Majestic Co.

Also Malleable Steel Range Manufacturing Corp.; Martin Stamping & Stove Co.; Norco, Inc.; Norge Sales Corp.; Norman Products Co.; Perfection Industries, Div. of Hupp Corp.; Robertshaw-Fulton Controls Co.; Geo. D. Roper Corp.; Scully Signal Co.; Specialties Appliance Corp.; Suburban Appliance Co.; The Sunray Stove Co.; The Webster Engineering Co.; Whirlpool Corp.

The Parade of New Freedom Gas Kitchens and Laundries will be shown by the following magazines in cooperation with the listed cabinet manufacturers: *American Home*, St. Charles Manufacturing Co.; *Better Homes & Gardens*, RCA Whirlpool, Whirlpool Corp.; *Family Circle*, Yorktowne Kitchens; *House & Garden*, Republic Steel Kitchens; *Ladies Home Journal*, Tracy Manufacturing Co.; *Living for Young Homemakers*, three kitchens by I-XL Furniture Co., and a Cardiac kitchen by Tracy Manufacturing Co.; *McCall's* Magazine, Mutschler Brothers Co.; *New Homes Guide*, Dimensional Kitchens; *Parents' Magazine*, Wood-Mode Kitchens; and *Woman's Day*, Nevamar Carefree Kitchens.

All kitchens and laundries will be featured in the listed magazines. Kitchens and laundries range in size from 10' by 20' to 20' by 20'.

All five sections of the Association will meet during the convention. Section headquarters will be in the following hotels: Accounting, Sheraton-Ritz Carlton; General Management, Dennis; Industrial and Commercial Gas, Traymore; Operating, Claridge; and Residential Gas, Traymore.

The annual Home Service Breakfast will be Tuesday, Oct. 14, at 8 a.m. in the Traymore. Mrs. Betty Morgan Rush, Baltimore Gas and Electric Co., will preside as chairman of the Home Service Committee. The afternoon round table on home service will be on Monday, Oct. 13, also at the Traymore.

The Accounting Section will meet Monday at 2 p.m. and again Tuesday at a 12:30 luncheon. C. F. Mills, Philadelphia Electric Co., coordinator of the Accounting Section's General Activities Group, will preside at the Monday session. L. J. Rauh, Baltimore Gas and Electric Co., chairman of the Section's Customer Accounting Group, will preside at the luncheon.

On Monday, Emanuel Toder, controller, Consolidated Edison Co. of New York, Inc., and chairman, A. G. A. Application of Accounting Principles Subcommittee, will speak on "The Revised Bulletin No. 44 of the American Institute of Certified Public Accountants." The subject will cover the declining balance of depreciation as it affects the gas industry.

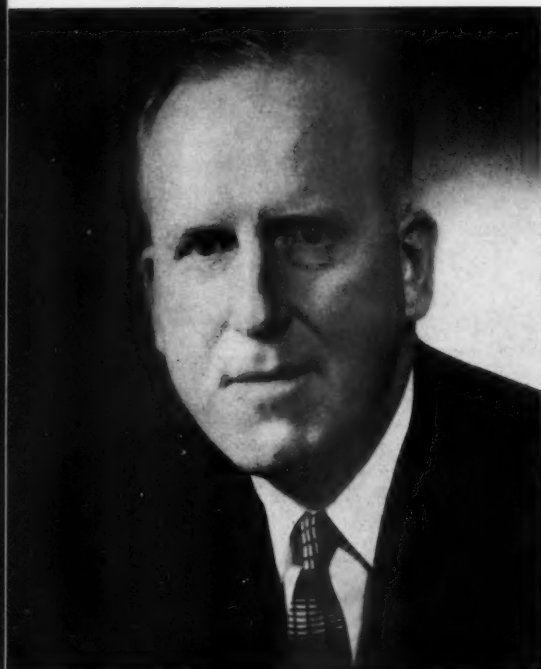
James J. Mahon, Jr., partner, Lybrand, Ross Brothers & Montgomery, will discuss current developments in Federal tax legislation.

E. A. Carlson, controller, Johnson & Johnson, will speak on "Financial Planning and Control."

(Continued on page 41)

For vice-presidents ►

For president



J. THEODORE WOLFE

For treasurer ►



WISTER H. LIGON



L. T. POTTER



VINCENT T. MILES

For directors



ESKIL I. BJORN



CARL E. CLOUD



A. W. JOHNSTON

A.G.A. nominates for 1958-1959



HERBERT J. BOOTHBY



H. D. BORGER



ORVILLE S. CARPENTER



MARVIN CHANDLER



CHARLES H. GUEFFROY



WM. G. HAMILTON JR.



W. J. HARVEY



ROBERT A. HORNBY



WALTER T. LUCKING



E. CLYDE MCGRAW



E. A. NORMAN JR.



GUSTAV F. WATTERS

Theodore Wolfe, president, Baltimore Gas and Electric Co., and second vice-president, American Gas Association, has been nominated for president of the Association for the coming year.

Mr. Wolfe and other officer and director nominees were selected by the A. G. A. General Nominating Committee. Delegates will vote on this slate during the Annual Convention to be held Oct. 13-15 in Atlantic City.

Wister H. Ligon, president, Nashville (Tenn.) Gas Co., was nominated for first vice-president, and L. T. Potter, president, Lone Star Gas Co., Dallas, Texas, was nominated for second vice-president.

Vincent T. Miles, treasurer, Long Island Lighting Co., Mineola, N. Y., was renominated for A. G. A. treasurer.

The Association's constitution and by-laws, in Article X, Section 2, provide that any 50 company members of the Association may make additional nominations for any or all officers and directors, and that any 50 individual members of any A. G. A. Section may make additional nominations for

chairman or vice-chairman of such section by placing their names in the hands of the managing director not later than Aug. 1.

An effort was made to appoint new directors and reappoint current directors on a geographic basis so that attitudes and interests as they vary within those areas may be considered by the Association's Board. Nominees were selected who would bring to the Board representation from all segments of the gas utility industry—large, medium and small companies; companies serving manufactured, natural and mixed gas; holding companies and appliance manufacturers.

The General Nominating Committee elected at the 1957 A. G. A. Annual Convention in St. Louis consists of the following:

F. M. Banks (chairman), president and general manager, Southern California Gas Co., Los Angeles, Calif.; J. R. Cole, vice-president, Southern Union Gas Co., Santa Fe, N. M.; H. R. Derrick, president, Laclede Gas Co., St. Louis, Mo.; Buell G. Duncan, president, Piedmont Natural Gas Co., Inc.,

For chairmen



J. GORDON ROSS
Accounting Section



MARVIN CHANDLER
General Management
Section



F. THOMPSON BROOKS
Industrial and Commercial
Gas Section



HERBERT C. JONES
Operating Section



THOMAS H. EVANS
Residential Gas
Section

For vice-chairmen



C. H. MANN
Accounting Section



OTTO W. MANZ JR.
General Management
Section



FRED A. KAISER
Industrial and Commercial
Gas Section



J. T. INNIS
Operating Section



SAMUEL W. HORSFIELD
Operating Section



H. WILLIAM DOERING
Residential Gas
Section

Charlotte, N. C.; E. H. Eacker, president, Boston Gas Co., Boston, Mass.; H. A. Eddins, president, Oklahoma Natural Gas Co., Tulsa, Okla.; W. G. Hamilton Jr., president, American Meter Co., Philadelphia, Pa.; Dale B. Otto, president, New Jersey Natural Gas Co., Asbury Park, N. J.; R. W. Ramsdell, president, The East Ohio Gas Co., Cleveland, Ohio.

Jac A. Cushman, A. G. A. secretary, was secretary of the General Nominating Committee.

The committee was unanimous in its selection of nominees. Therefore, in accordance with the constitution and by-laws of the Association, the following list of nominees is proposed to the membership:

For president—J. THEODORE WOLFE, president, Baltimore Gas and Electric Co., Baltimore, Md.

For first vice-president—WISTER H. LIGON, president, Nashville Gas Co., Nashville, Tenn.

For second vice-president—L. T. POTTER, president, Lone Star Gas Co., Dallas, Texas.

For treasurer—VINCENT T. MILES, treasurer, Long Island Lighting Co., Mineola, N. Y.

ROBERT W. OTTO, chairman of the board, Laclede Gas Co., St. Louis, Mo., becomes a director upon completion of his present term as Association president.

Newly nominated and re-nominated directors are:

ESKIL I. BJORK, chairman, The Peoples Gas Light and Coke Co., Chicago, Ill.

*EVERETT J. BOOTHBY, president, Washington Gas Light Co., Washington, D. C.

H. D. BORGER, president, The Peoples Natural Gas Co., Pittsburgh, Pa.

*ORVILLE S. CARPENTER, president, Texas Eastern Transmission Corp., Shreveport, La.

*MARVIN CHANDLER, president, Northern Illinois Gas Co., Aurora, Ill.

*CARL E. CLOUD, president, MidSouth Gas Co., Little Rock, Ark.

*CHARLES H. GUEFFROY, president, Northwest Natural Gas Co., Portland, Ore.

WM. G. HAMILTON JR., president, American Meter Co., Philadelphia, Pa.

W. J. HARVEY, vice president—gas operation, Public Service Electric & Gas Co., Newark, N. J.

*ROBERT A. HORNBY, president, Pacific Lighting Corp., San Francisco, Calif.

A. W. JOHNSTON, vice president in charge of gas operations, Boston Gas Co., Boston, Mass.

*WALTER T. LUCKING, president, Arizona Public Service Co., Phoenix, Ariz.

E. CLYDE MCGRAW, president, Transcontinental Gas Pipe Line Corp., Houston, Texas.

E. A. NORMAN JR., president, Norman Products Co., Columbus, Ohio.

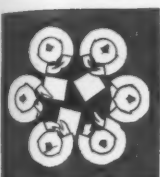
GUSTAV F. WATTERS, executive vice president, Niagara Mohawk Power Corp., Syracuse, N. Y.

ACCOUNTING SECTION

For chairman—J. GORDON ROSS, manager of service and customer relations, Rochester Gas & Electric Corp., Rochester, N. Y.

(Continued on page 56)

* Renominated.



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons

Assistant Personnel Manager
Philadelphia Electric Company

● **Sixty-minute men**—Thompson Products, Inc., Cleveland, has launched a 60-Minute Man program. It is aimed to inspire employees to make the most of their job time during the critical first and last 30 minutes of each day.

"There are conservatively 60 minutes during the day when we have conspicuous losses," says J. D. Wright, company president, in a letter to all employees. "These are the 30 minutes immediately after the beginning of the shift and the 30 minutes before the shift officially comes to an end."

To win support of this drive for a full day's work, Thompson Products has designed a poster campaign and distributed information kits for supervisors to help them discuss basic program objectives with workers. In addition, company officials presented the plan to union representatives, who agreed they would support the plan to reduce costs.

● **Is lonesome pay a fringe?**—For machine tenders who must work off in an isolated corner, a British labor union is demanding "lonesome pay." This would compensate an operator for the special pains of being off by himself, declares the McGraw-Hill Department of Economics, which reported this development.

What the British union is demonstrating here, perhaps, is its belief in the oft-stated principle of human relations—that much of what most of us do is for social or gregarious reasons. When work does not provide such an incentive, many want to be compensated in another way.

But what about the occasional person who dislikes groups? Should he expect "claustrophobia" pay when asked to work with others?

● **Future industrial relations**—Looking into the future of industrial relations, U.S. Department of Labor Secretary James P. Mitchell recently called for four pieces of legislation to protect both the individual worker and legitimate trade unionism. His proposals are:

1. Registration, detailed reporting, and public disclosure of financial operation of employee pension and welfare funds.

2. Publication by the Secretary of Labor of annual financial reports now made to the Labor Department under the Taft-Hartley Act.

3. Free and secret election of union officers no less than once every four years.

4. Restriction of the use of picketing to force an employer and his employees to have a union against their will; i.e., "black-mail" picketing.

These four bills would make tomorrow's industrial relations less hectic, he feels.

In addition, Secretary Mitchell expects that the future of industrial relations will be characterized by a decrease of pattern bargaining and that collective bargaining this year will not be played against a background of uniform growth. Consequently bargaining will be stiffer than it has been.

And finally, Secretary Mitchell predicts that the changing nature of the work-force, with its long-range demand for trained engineers, craftsmen, and managerial personnel, will affect the hiring, training, and upgrading practices of industry in general.

● **Is brainstorming the answer?**—Bernard S. Benson, in his article "Let's Toss This Idea Up" in October's *Fortune*, discusses this question about brainstorming as the answer to insurmountable business problems, or is it just temporary insanity? Aimed at getting as many ideas as possible from a lively group discussion of a given problem, the technique was originated to stimulate promotional and marketing ideas. But it has long since outgrown those modest aspirations.

Instead of tackling problems with intelligence and logic, the current idea seems to be that businessmen should flock to games, fads, and fantasies, hoping that out of some magic blue yonder they can painlessly conjure solutions to serious problems. Mr. Benson inquires if this directs our attention to the fact that modern education does not train us to stand on our own feet as individuals.

He says that no amount of cerebral popcorn will produce the best solution to a complicated problem or provide a substitute for systematic reasoning. Brainstorming, like the old-fashioned bull session which it resembles, can only serve the limited function of stimulating lively discussion.

● **NLRB rulings on ballot marking**—The NLRB held invalid a ballot that contained the signature of the voter, but held valid a ballot that contained a four-letter expletive which merely emphasized the voter's intent to vote against the union (George K. Garrett Co.).

● **Supervisors' statements can be troublesome**—Supervisors have the closest contact with employees, and sometimes unwittingly make statements that get their employers in

trouble.

The NLRB and the courts have consistently held employers responsible for supervisors' acts, even though the acts were unauthorized. During unionization campaigns, employees often discuss matters with their supervisors which they would not discuss with the employer. But the supervisor should be on his guard. The same rule which applies to his employer also applies to him. Employees cannot be threatened with reprisals or force for engaging in union activity, or promised reward for rejecting a union. Employers have been found guilty of unfair practices because of these statements made by supervisors:

Threatening "probable" loss of overtime and plant shutdown (NLRB v. *Geigy Company*, 54 ALC 786).

Promising "something good" for rejection of a union, and threatening to move the plant if the union came in (NLRB v. *Clearfield Cheese Co., Inc.*, 54 ALC 958).

Telling employees that if they signed union cards, they could look for work elsewhere (NLRB v. *The Sun Co.*, 54 ALC 1524).

Although interrogation of employees about union activities is no longer a "per se" violation of the NLRA, employers' right to question employees is a limited one. It can only be used in a non-coercive atmosphere, and generally, only when necessary for a legitimate employer interest.

● **Supreme Court decision on bargaining**—The Supreme Court has ruled that an employer cannot insist upon a contract provision that would make a union's decision to strike depend on approval of a majority of the employees. At the same time, the high court also held that an employer cannot insist on contracting exclusively with a local union when the international is the certified bargaining agent (NLRB v. *Wooster Division, Borg-Warner Corp.*).

The Court said there is no harm in requesting such terms; but it is an unlawful refusal to bargain to insist upon them.

Shortly after being elected and certified as the representative of employees for the Wooster (Ohio) Division of the Borg-Warner Corp., the United Auto Workers International chartered a new local and the two unions presented the company with a collective bargaining agreement. In the "recognition" clause of this contract, the unions described themselves as both the "International Union . . . and its Local Union."

The company then submitted a counter-proposal which recognized the local as the sole representative of employees. It also proposed that on issues not subject to arbitration, no strike could be called unless

(Continued on page 18)

232 delegates to West Coast Domestic Gas
Research and Utilization Conference review latest gas industry research projects

Record turnout for Coast meeting



Dr. L. P. Nichols, California Institute of Technology, told of propellents now in use



A. G. A. Managing Director C. S. Stackpole told group what to expect in next 5 years



J. H. Hollingsworth presided at the opening session as chairman of the 1958 conference

West Coast gas men turned out in record numbers June 4-5 for an up-to-the-minute report on what's new in gas industry research. Exactly 232 delegates—an all-time high for this meeting—attended the West Coast Domestic Gas Research and Utilization Conference in Los Angeles.

Because of the interest of air conditioning to the industry, all of the first afternoon's program was devoted to gas air conditioning.

Chairman of the conference was J. H. Hollingsworth, manager, design and development, Day and Night and Payne Divisions of the Carrier Corp. He presided at the opening session, and welcomed the group to Los Angeles.

Other first morning speakers were

A. R. Bailey, senior vice-president, Southern Counties Gas Co.; Herbert Luoma, director of technical services, Gas Appliance Manufacturers Association; and Roy A. Siskin, A. G. A. utilization research engineer.

The conference was sponsored jointly by the American Gas Association and the Pacific Coast Gas Association.

Mr. Bailey, a director of the PCGA and a member of the A. G. A. PAR Committee, spoke on "The A. G. A. PAR Plan Program." He traced the history, background and growth of the PAR Plan and described its function and major accomplishments. He emphasized the highlights of the research program and their significance to the gas industry.

Mr. Luoma asked this question: How can manufacturer research be coordinated with PAR research?

He answered the question saying that engineers from both large and small manufacturing firms throughout the United States have indicated their research programs are carefully coordinated with PAR. This has been made possible, he said, largely through the use of the PAR research bulletins.

Mr. Siskin described the function and construction of the new all-gas Multi-matic Wall, and gave a graphic picture of the wall with a slide presentation.

At the June 4 luncheon, A. G. A. Managing Director C. S. Stackpole was the featured speaker. He was introduced by C. H. Gueffroy, PCGA president, and



A view of the head table and delegates at June 4 luncheon



Dr. L. P. Nichols was speaker at Thursday luncheon meeting

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president, Portland Gas and Coke Co.

Speaking on "What Can and Should We Look Forward To in the Five Years Ahead," Mr. Stackpole said that the industry's future is practically unlimited. He mentioned the prospective pipelines that will bring gas from Canada into the United States, the tremendous expansion of the Pacific Northwest, and said that gas loads in the Northwest probably will double within the next seven years.

He stated that the gas industry expects to prosper through 1963 due to the building of new and remodeling of old homes. Some of the improvements he would like to see include faster top burners, better controls, no top grates,

flexibility in appliances, faster water heaters and complete automatic ignition.

That afternoon, R. F. Ogborn, manager of customer service, Southern California Gas Co., presided. R. B. Smith, A. G. A.'s assistant director of research and manager of the Association's air conditioning research program, reviewed that program. With the use of slides, he described the principles of locomotion such as the internal combustion engine, the free piston engine, and the absorption system.

Following Mr. Smith, a panel discussion on domestic heating and air conditioning was presented. The moderator was S. F. Skafte, director of engineering, Utility Appliance Corp., Los Angeles.

Panel members were Edward N. Henderson, vice-president, Arkla Air Conditioning Corp.; A. J. Horn, assistant to the president, Day and Night and Payne Divisions, Carrier Corp.; and Walter B. Kirk, chief research engineer, A. G. A. Laboratories, Cleveland.

Mr. Henderson, speaking on "The Arkla All-Year Air Conditioner," told of progress made on Arkla air conditioning units thus far. He said the company now has in production an improved model, a five-ton unit rated at 96,000 Btu heating capacity.

Mr. Horn reported on the Carrier absorption-type air conditioners. He said that units are being made available for field testing. The utility companies will

determine the suitability of the units as well as the operating costs.

Mr. Kirk discussed the proposed requirements for gas air conditioning units which were made by an appointed working group under the chairmanship of I. E. Rowe, United Gas Corp.

Immediately following the panel, Mr. Kirk presented a paper entitled "Proposed Requirements for Gas-Fired Air Conditioning Equipment and Facilities for Conducting Cooling Capacity Tests at the A. G. A. Laboratories." He described the cooling capacity facilities developed and constructed at the A. G. A. Laboratories under the program of the Association's Task Group for Air Conditioning.

The first day's sessions were concluded with three talks based on "Equipment and Residential Design for Optimum All-Year Comfort." Talks were from the standpoint of the control manufacturer, the architect-builder, and the furnace and air conditioner manufacturer.

Representing the control manufacturer was J. F. Ray, vice-president, General Controls Co., Glendale, Calif. Mr. Ray stressed the importance of the upgrading of controls.

Speaking for the architect-builder was Willard Woodrow, president, Alden Construction Co., Bellflower, Calif. Mr. Woodrow said that the present application of air conditioning in Southern California homes is strictly on a piecemeal basis and that "no effort is being made to make air conditioning attractive, particularly for the smaller homes." He said the installation of air conditioning and heating units is important, and warned that the appliance manufacturer is only as good as the man who installs the

equipment.

He added, "It's time for appliance manufacturers to sit down with subcontractors and cooperate." Mr. Woodrow said that the gas companies are doing a good job in this direction.

Roland R. Taylor, research engineer, Fraser & Johnson Co., San Francisco, spoke for the furnace and air conditioner manufacturer. He personally blamed the contractor "for having cheapened the appliances through requirements of the builder." He emphasized the need for a single testing agency for air conditioning appliances, and said that in his opinion, the American Gas Association is the only testing agency qualified to undertake such a task.

The June 5 morning session was presided over by R. I. Snyder, vice-president, Southern California Gas Co.

Morning speakers were J. C. Griffiths, senior research engineer, A. G. A. Laboratories, Cleveland; J. R. Van Curen, vice-president, Holly-General Co., Pasadena; Rolland P. Cravens, chief, mechanical bureau, Department of Building and Safety, City of Los Angeles; and William E. Mahaffay, vice-president, Whirlpool Corp., St. Joseph, Mich.

Mr. Griffiths described a survey of low Btu pilot applications conducted under the A. G. A. research program.

Mr. Van Curen emphasized the importance of proper sizing in water heaters since 80 per cent of the total domestic water consumption in the West Coast area is heated water. He said the water heater manufacturer's goal must be aimed toward better products, and that price as much as quality should be considered.

Codes and ordinances were discussed by Mr. Cravens. He called for the coordination of industry standards, and said he felt that it would be preferable if A. G. A. could apply its jurisdiction beyond the limits of the appliance with particular reference to venting and vent pipes. He said he would like to see the City of Los Angeles have a voice in the preparation of American Standard Requirements.

Mr. Mahaffay spoke on "Research, the Engineer, and the Gas Industry." His talk concerned the aspects of the gas refrigerator.

At the June 5 luncheon, W. M. Jacobs, vice-president, Pacific Lighting Corp., a past president of PCGA, and chairman of the A. G. A. Gas Industry Development Committee, introduced the featured speaker, Dr. L. P. Nichols. Dr.

Nichols is chief, propellants division, jet propulsion laboratory, the California Institute of Technology, Pasadena.

His topic was "Exotic Fuels." He showed slides pertaining to the construction of rocket motors and of the various types of propellants used in his work.

George S. Coates, manager, customers department, Southern Counties Gas Co., presided at the final afternoon session.

Speaking on current A. G. A. water heating research, J. C. Griffiths reviewed the projects and progress being made in the PAR sponsored domestic gas water heating research program. He described new designs for increasing appreciably the hot water capacity of conventional sized water heaters. He also told of research concerned with non-conventional designs of water heating appliances and of the aspects of cathodic protection of water heaters through the use of magnesium anodes.

Harold W. Rice, director of research, Robertshaw-Fulton Controls Co., Western Research Center, Anaheim, Calif., discussed the importance of accuracy of controls needed for high recovery heaters and suggested what might be done about the development of such controls.

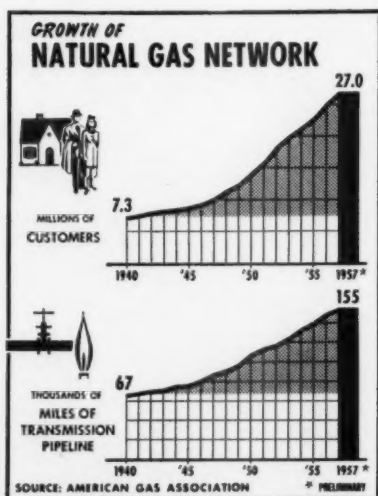
A panel presentation on "Domestic and Commercial Cooking" followed. The moderator was W. M. Couzens, consulting engineer and manufacturers representative, Los Angeles.

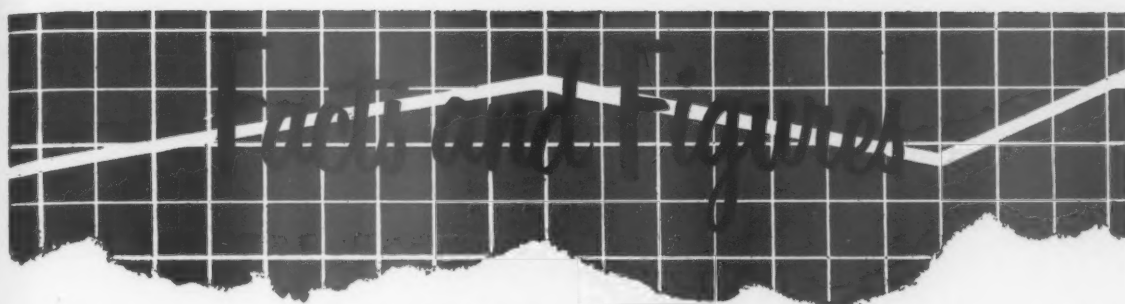
First panelists was T. E. Hampel, assistant chief research engineer, A. G. A. Laboratories, Cleveland. Mr. Hampel reviewed PAR sponsored research of the Laboratories in the domestic and commercial cooking fields. He described new burner and top section developments which are leading to vastly increased cooking speeds.

H. L. Warren, assistant utilization engineer, Southern California Gas Co., reviewed the A. G. A. domestic gas range requirements. He was followed by S. W. Lynch, staff assistant, commercial sales, Southern Counties Gas Co., who discussed the Association's commercial cooking appliance requirements.

A dramatic look into the homemaker's kitchen five years from now was made by Gladys B. Price, home service supervisor, Southern Counties Gas Co.

Closing out the panel discussion was Clifford D. Mohr, national marketing manager—ranges, Gaffers & Sattler Division, Utility Appliance Corp. He told delegates what manufacturers are working toward five years hence.





Prepared by A. G. A. Bureau of Statistics

Housing starts in May surged to a total of 105,000 units representing the highest number of starts in any month so far this year. This figure is 1.9 per cent higher than May of last year, and 10.5 per cent above April of this year. The U.S. Department of Labor estimated that housing starts are now at the annual rate of 1,010,000 units. Should housing continue to improve as it has done in April and May the prospects for increased gas appliance shipments will brighten.

Shipments of all types of gas-fired central heating equipment were up for the first time since November of last year, while shipments of gas ranges and water heaters continue to lag behind those of a year ago.

The appliance data relate to manufacturers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data compiled by the National Electrical Manufacturers Association and are represented by GAMA in its releases. Data relating to oil-fired burner installations are compiled by *Fuel Oil and Oil Heat*. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

Total sales of the gas utility and pipeline industry to ultimate consumers during April 1958 amounted to 7,127 million therms, an increase of 2.4 per cent over the 6,961 million therms sold in April of last year. This increase in gas sales is due primarily to the additional number of new customers served by the industry through new home construction and the increased number of househeating units installed since April 1957. During the month of April industrial sales amounted to 3,134 million therms, a drop of 5.7 per cent when compared to the 3,323 million therms sold in April 1957.

(Continued on page 28)

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING MAY 1958

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	May		April		First Four Months Ending April 30, 1958	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	147,500	- 5.6	148,300	-12.1	560,600	-15.0
Electric	n.a.	n.a.	95,600	-10.8	431,200	-16.9
WATER HEATERS						
Gas	209,100	-10.4	222,700	- 6.5	896,000	+ .9
Electric	n.a.	n.a.	68,500	+ 4.4	256,800	+ 2.4
GAS HEATING—Total	74,100	+14.0	65,500	- 3.1	244,700	- 0.2
Furnaces	55,700	+11.6	50,600	- 1.4	192,500	+ 1.5
Boilers	8,000	+14.3	7,300	+15.9	23,400	- 1.7
Conversion Burners	10,400	+28.4	7,600	-24.0	28,800	- 9.7
OIL-FIRED BURNER						
Installations	30,568	-12.2	32,415	- 6.2	140,865	- 4.3
DRYERS (excluding washer-dryers)						
Gas	13,400	+17.7	10,600	-29.7	82,130	-29.6
Electric	28,520	+32.8	27,880	+ 0.4	208,350	-22.5

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING APRIL

(MILLIONS OF THERMS)

	1958	1957	Per Cent Change
Month of April			
All types of Gas	7,126.9	6,961.1	+ 2.4
Natural Gas	6,876.2	6,739.4	+ 2.0
Other Gases	250.7	221.7	+13.1
Twelve Months Ending April 30			
All types of Gas	78,186.7	74,006.4	+ 5.6
Natural Gas	75,789.8	71,535.5	+ 5.9
Other Gases	2,396.9	2,470.9	- 3.0
April Index of Monthly Utility Gas Sales (1947-49 = 100)	237.7	232.2	+ 2.4

PERTINENT BUSINESS INDICATORS, APRIL

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	April			March		
	1958	1957	Per Cent Change	1958	1957	Per Cent Change
Industrial activity (1947-49 = 100)	126	144	-12.5	128	145	-11.7
Consumer prices (1947-49 = 100)	123.5	119.3	+ 3.5	123.3	118.9	+ 3.7
Housing starts, Non-farm (thousands)	95.0	93.7	+ 1.4	79.0	87.0	- 9.2
New private construction expenditures (\$ million)	2,583	2,603	- .8	2,442	2,405	+ 1.5
Construction costs (1947-49 = 100)	165.9	158.0	+ 5.0	164.6	156.6	+ 5.1

Making PAR Possible

NEW ENGLAND REGION

Concord Natural Gas Corp., Concord, N. H.
Central Massachusetts Gas Co., Webster, Mass.
Lawrence Gas Co., Lawrence, Mass.
Lynn Gas & Electric Co., Lynn, Mass.
Mystic Valley Gas Co., Malden, Mass.
Northampton Gas Light Co., Northampton, Mass.
North Shore Gas Co., Salem, Mass.
Norwood Gas Co., Norwood, Mass.
Wachusett Gas Co., Leominster, Mass.
Boston Gas Co., Boston, Mass.
Fall River Gas Co., Fall River, Mass.
The Hartford Electric Light Co., Hartford, Conn.
New Bedford Gas and Edison Light Co., Cambridge, Mass.
Cambridge Gas Co., Cambridge, Mass.
Worcester Gas Light Co., Worcester, Mass.
New Britain Gas Light Co., New Britain, Conn.
Haverhill Gas Co., Haverhill, Mass.
The Greenwich Gas Co., Greenwich, Conn.
Brockton Taunton Gas Co., Brockton, Mass.
Fitchburg Gas & Electric Light Co., Fitchburg, Mass.
Rockland Light & Power Co., Nyack, N. Y.
Springfield Gas Light Co., Springfield, Mass.
The Housatonic Public Service Co., Derby, Conn.

These companies are PARTners in '58. They are taking advantage of an action-tested team approach—an approach that helps the industry to maintain its leadership, while it helps the PAR subscriber to meet national promotion, advertising, research, and public information needs. PAR undertakes those jobs that can be done only or done best at the national level. Multiply your sales-power by joining PAR today!

Manchester Gas Co., Manchester, N. H.
Algonquin Gas Transmission Co., Boston, Mass.
The Connecticut Light & Power Co., Hartford, Conn.
The Hartford Gas Co., Hartford, Conn.
Blackstone Valley Gas & Electric Co., Pawtucket, R. I.
Lowell Gas Co., Lowell, Mass.
The Bridgeport Gas Co., Bridgeport, Conn.
New Haven Gas Co., New Haven, Conn.
Ware Gas Co., Ware, Mass.
The Berkshire Gas Co., Pittsfield, Mass.

MID EASTERN REGION

Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.
The Brooklyn Union Gas Co., Brooklyn, N. Y.
Elizabethtown Consolidated Gas Co., Elizabeth, N. J.
Consolidated Natural Gas System
The East Ohio Gas Co.
Hope Natural Gas Co.
New York State Natural Gas Corp.
The Peoples Natural Gas Co.
The River Gas Co.
City Gas Co. of New Jersey, Flemington, N. J.
City Gas Co. of Phillipsburg, Phillipsburg, N. J.
Syracuse Suburban Gas Co., East Syracuse, N. Y.
North Penn Gas Co., Port Allegany, Pa.
Baltimore Gas & Electric Co., Baltimore, Md.
New Jersey Natural Gas Co., Asbury Park, N. J.
Delaware Power & Light Co., Wilmington, Del.

The Columbia Gas System, Inc.
Amere Gas Utilities
Columbia Gas of Kentucky, Inc.
Columbia Gas of New York, Inc.
Cumberland and Alleghany Gas Co.
The Manufacturers Light & Heat Co.
The Ohio Fuel Gas Co.
United Fuel Gas Co.
Virginia Gas Distribution Corp.
Philadelphia Electric Co., Philadelphia, Pa.
Keokuk Gas Service Co., Philadelphia, Pa.
Rochester Gas & Electric Corp., Rochester, N. Y.
Long Island Lighting Co., Mineola, N. Y.
The United Gas Improvement Co., Philadelphia, Pa.
Public Service Electric & Gas Co., Newark, N. J.
Equitable Gas Co., Pittsburgh, Pa.
Hagerstown Gas Co., Hagerstown, Md.
Washington Gas Light Co., Washington, D. C.
Consolidated Edison Co. of New York, N. Y.
International Nickel Co., New York, N. Y.
South Jersey Gas Co., Atlantic City, N. J.

SOUTHEASTERN REGION

Gas Light Co. of Columbus, Columbus, Ga.
Nashville Gas Co., Nashville, Tenn.
Western Kentucky Gas Co., Owensboro, Ky.
Suffolk Gas Co., Suffolk, Va.
Piedmont Natural Gas Co., Inc., Charlotte, N. C.
Mid-Georgia Natural Gas Co., Sarasota, Fla.
South Atlantic Gas Co., Savannah, Ga.
Texas Gas Transmission Corp., Owensboro, Ky.

Florida Home Gas Co., DeLand, Fla.
Knoxville Utilities Board, Knoxville, Tenn.
Alabama Gas Corp., Birmingham, Ala.

SOUTHWESTERN REGION

Lone Star Gas Co., Dallas, Tex.
Arkansas Western Gas Co., Fayetteville, Ark.
Sabine Gas Co., Inc., Many, La.
Zenith Gas System, Inc., Alva, Okla.
State Fuel Supply Co., Oklahoma City, Okla.
Arkansas Louisiana Gas Co., Shreveport, La.
United Gas Corp., Shreveport, La.
United Gas Pipe Line Co., Shreveport, La.
Transcontinental Gas Pipe Line Corp., Houston, Tex.
Louisiana Power & Light Co., New Orleans, La.
Hobbs Gas Company, Hobbs, N. M.
New Orleans Public Service, Inc., New Orleans, La.
Oklahoma Natural Gas Co., Tulsa, Okla.
El Paso Natural Gas Co., El Paso, Tex.
Texas Eastern Transmission Corp., Shreveport, La.
Phillips Petroleum Co., Bartlesville, Okla.
Pioneer Natural Gas Co., Amarillo, Tex.
Houston Natural Gas Corp., Houston, Tex.
Southern Union Gas Co., Dallas, Tex.

GREAT LAKES REGION

Northern Illinois Gas Co., Aurora, Ill.
Cincinnati Gas & Electric Co., Cincinnati, Ohio
Central Illinois Public Service Co., Springfield, Ill.
Southern Indiana Gas & Electric Co., Evansville, Ind.
Madison Gas & Electric Co., Madison, Wis.
Hoosier Gas Corp., Vincennes, Ind.
Northern Indiana Public Service Co., Hammond, Ind.
Pendleton Natural Gas Co., Pendleton, Ind.
Battle Creek Gas Co., Battle Creek, Mich.
Citizens Gas Fuel Co., Adrian, Mich.
The Dayton Power & Light Co., Dayton, Ohio

Southeastern Michigan Gas Co., Port Huron, Mich.
The Peoples Gas Light & Coke Co., Chicago, Ill.
North Shore Gas Co., Waukegan, Ill.
Winnebago Natural Gas Corp., Kaukauna, Wis.
Allied Gas Co., Paxton, Ill.
Consumers Power Co., Jackson, Mich.
Michigan Consolidated Gas Co., Detroit, Mich.
Milwaukee Gas Light Co., Milwaukee, Wis.
Richmond Gas Corp., Richmond, Ind.
Wisconsin Public Service Corp., Milwaukee, Wis.
Indiana Gas & Water Co., Indianapolis, Ind.
Citizens Gas & Coke Utility, Indianapolis, Ind.
West Ohio Gas Co., Lima, Ohio
Kokomo Gas & Fuel Co., Kokomo, Ind.
Central Illinois Light Co., Peoria, Ill.
Natural Gas Service, Inc., Madison, Ind.
The Ohio Gas Co., Bryan, Ohio
Central Indiana Gas Co., Muncie, Ind.

MID-WEST REGION

Pueblo Gas & Fuel Co., Pueblo, Colo.
Public Service Co. of Colorado, Denver, Colo.
Kansas-Nebraska Natural Gas Co., Inc., Hastings, Neb.
Montana-Dakota Utilities Co., Minneapolis, Minn.
Greeley Gas Co., Denver, Colo.
Citizens Gas Co. of Hannibal, Hannibal, Mo.
Iowa-Illinois Gas & Electric Co., Davenport, Iowa
Cheyenne Light Fuel & Power Co., Cheyenne, Wyo.
Bowling Green Gas Co., Bowling Green, Mo.
Laclede Gas Co., St. Louis, Mo.
Minnesota Valley Natural Gas Co., Minneapolis, Minn.
Metropolitan Utilities District, Omaha, Neb.
Tri-Cities Gas Corp., Coffeyville, Kan.
Northern States Power Co., Minneapolis, Minn.

WESTERN REGION

Washington Natural Gas Co., Seattle, Wash.

San Diego Gas & Electric Co., San Diego, California
Portland Gas & Coke Co., Portland, Ore.
Mountain Fuel Supply Co., Salt Lake City, Utah
Southern California Gas Co., Los Angeles, Calif.
Southern Counties Gas Co. of California, Los Angeles, Calif.

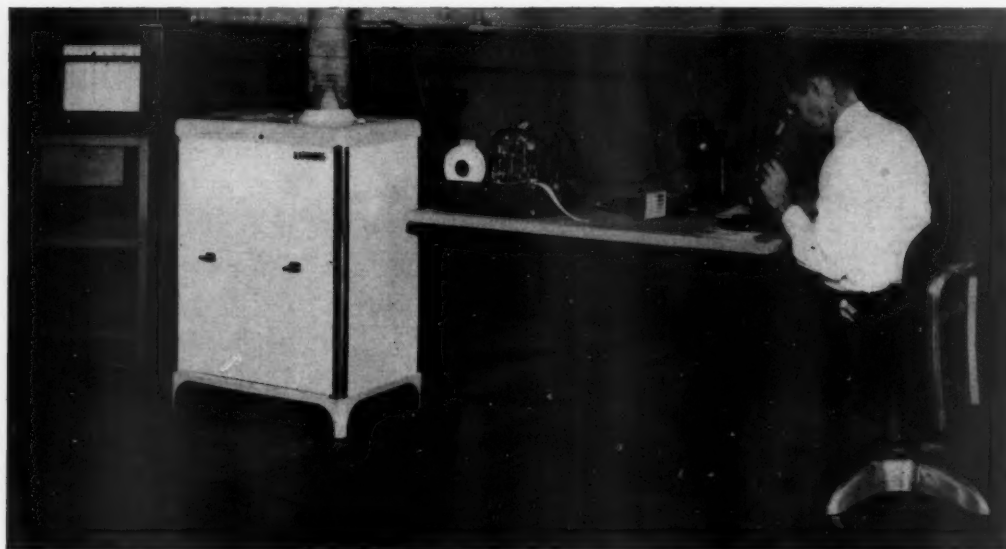
CANADA

British Columbia Electric Co., Vancouver, B. C.
Union Gas Co. of Canada, Chatham, Ont.
The Valley Gas Co., Ltd., Turner Valley, Alta.
Canadian Western Natural Gas Co., Calgary, Alta.
Northwestern Utilities, Ltd., Edmonton, Alta.

PIPELINE COMPANIES

New York State Natural Gas Corp., Pittsburgh, Pa.
Atlantic Seaboard Corp., Charleston, W. Va.
Home Gas Co., Pittsburgh, Pa.
Kentucky Gas Transmission Corp., Charleston, W. Va.
United Gas Pipe Line Co., Shreveport, La.
Natural Gas Pipeline Co. of America, Chicago, Ill.
Texas Illinois Natural Gas Pipe Line Co., Chicago, Ill.
Transcontinental Gas Pipe Line Corp., Houston, Tex.
Algonquin Gas Transmission Co., Boston, Mass.
Michigan Wisconsin Pipeline Co., Detroit, Mich.
American Louisiana Pipeline Co., Detroit, Mich.
El Paso Natural Gas Co., El Paso, Tex.
Texas Eastern Transmission Corp., Shreveport, La.
Southern Natural Gas Co., Birmingham, Ala.
Texas Gas Transmission Corp., Owensboro, Ky.
Pacific Lighting Gas Supply Co., Los Angeles, Calif.
Colorado Wyoming Gas Co., Denver, Colo.
Northern Natural Gas Co., Omaha, Neb.

Two research bulletins published



D. W. Skipworth, co-author of Research Bulletin 78, measures flue gas temperature, imposed flue draft, smoke density and particulate matter in an experimental smokeless-odorless incinerator at A. G. A. Labs

New smokeless-odorless incinerator is described in Research Bulletin 78

The design of household type gas incinerators for smokeless-odorless and fly ash free operation is discussed in a recent bulletin issued by the American Gas Association Laboratories.

Published as Research Bulletin 78 *Design of Domestic Gas-Fired Incinerators for Elimination of Smoke, Odors, and Fly Ash*, the bulletin presents design data and related information of interest to municipal authorities, air pollution control officials, gas utilities and equipment manufacturers resulting from a comprehensive research study on household type gas incinerators.

The study was sponsored by the Association's Committee on Domestic Gas Research as PAR Plan Project DA-1-M. After a literature survey (including work by Professor L. T. Bissey of Pennsylvania State College for the Pennsylvania Natural Gas Men's Association), the research was conducted by the A. G. A. Laboratories in conjunction with Battelle Memorial Institute. Both institutions developed and have successfully demonstrated prototype models having smokeless-odorless and fly ash free operating characteristics.

Although household type gas incinerators have been on the market for over 30 years, a survey of their status in 1953 showed that while this type of appliance was increasing in popularity, little information was available with which to design units that were fully acceptable

to city authorities and air pollution control officials. In fact, experiments with incinerators then on the market, using newly developed testing methods, clearly indicated that improvements were both desirable and possible.

At the time of the survey, a number of city governments were considering enacting sanitation laws which would require the householder to dispose of his own combustible household wastes. Air pollution control officials, however, were fearful that widespread use of such equipment might create undesirable atmospheric conditions. In some cases action had been taken to stop further installations in their areas.

Anticipating the needs of city authorities and air pollution control officials as well as recognizing the public service potential of this type appliance through

improved sanitation, the gas industry requested A. G. A. to develop and to demonstrate methods adaptable to improving further the operating performance of domestic gas incinerators. The more important improvements desired included smokeless, odorless, fly ash free effluents (including spark elimination from effluent gases) and better control of flue gas temperature during the combustion of fast burning dry materials.

Incineration of household wastes is a unique problem. It is unlikely that any other fuel burning device is subjected to such wide variations in composition, size, heating value, and moisture content of the material being burned. With a wet garbage charge, the incineration process involves drying, destructive distillation, and complete combustion of the materials to be burned.

Burning of highly combustible dry materials presents the additional burden of preventing run-away combustion with accompanying excessive heat releases and excessive temperatures. Excessive rapid combustion is likely to occur when burning quantities of shredded newspaper, milk cartons, and similar dry fast burning items unless the design of the appliance is such as to limit the air supplied to the refuse combustion chamber.

Complete combustion of household waste items in a gas-fired incinerator is most effectively accomplished in two steps. In the initial step, the gas flame is used to supply heat to dry and eventually ignite any wet waste items placed in the refuse chamber into a combustible state. In the latter step, the gas flame is used in a manner that any smoke and obnoxious odors that may result from the initial dehydration and burning of the charge will be consumed. Thus, smokeless and odorless operation can be achieved by methods employing flame scavenging or by high temperature treatment of combustible volatiles in gases emitted by the refuse materials, or by a combination thereof.

Precipitation of fly ash particles from combustion products is desired to obtain clean effluent gases. This may be effected by changes in direction of flow, and by velocity reduction. Dilution of hot gases leaving the after burning process with cool air serves to reduce both the effluent gas temperature and its velocity. Run-away combustion can also be controlled by limiting the air supply to the refuse combustion chamber, and then supplying ample air to the after burning process.

To explore the effectiveness of various design concepts and experimental con-

figurations to consume smoke and odors and to trap fly ash particles, hundreds of tests were performed using a wide range of refuse materials. These materials included grass clippings, chicken cleanings, floor sweepings, rubber, wool and many other items common to a household. Studies were also made of various types of measuring instruments to determine those suitable for the evaluation of smoke and fly ash content.

In Bulletin 78, the practical design principles to eliminate smoke, odor and fly ash from domestic gas incinerators have been described in detail. Discussion is also presented on the use of catalysts, gas-fired ceramics, stainless steel grid mixers and the direct gas-fired after burner. Other sections of the bulletin outline methods of reducing flue gas and jacket temperatures. The venting of household incinerators with other types of appliances into a common flue is also discussed.

Research Bulletin 78 was authored by D. W. Skipworth, A. G. A. Laboratories, and by Dr. Harlan W. Nelson and Glen M. Hein of the Battelle Memorial Institute. Copies are available from the A. G. A. Laboratories, 1032 East 62nd St., Cleveland 3, Ohio, or from A. G. A. Headquarters at \$3 each.

Bulletin on atmospheric gas burner design now available

Copies of A. G. A. Laboratories Research Bulletin 10 "Research in Fundamentals of Atmospheric Gas Burner Design" are now available.

Bulletin 10, first published in 1940, has been reprinted without change for the third time to fill orders from the industry for this publication. The text is a

basic guide to the proper design of atmospheric gas burners. Copies are available from the A. G. A. Laboratories at \$2.00 each.

Top burner thermal efficiency requirement test revised

A revised thermal efficiency requirement for domestic gas range top burners will become effective January 1, 1959. The provisions were prepared by the Subcommittee on Approval Requirements for Domestic Gas Ranges and approved by the ASA Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee.

Revisions were necessary since commercial production of the current thermal efficiency test vessels had been discontinued thus requiring the selection of a substitute vessel. The requirement is now awaiting approval as American Standard by the American Standards Association.

Under the proposed American Standard, the thermal efficiency must not be less than 48 per cent for regular and giant size top burners having input rat-

ings from 9,000 to 14,500 Btu per hour. A top burner with an input rate exceeding 14,500 Btu per hour must have a thermal efficiency of not less than 45 per cent. A thermal efficiency of not less than 50 per cent has been specified for regular and giant size burners for use with liquefied petroleum gases. Special, convertible and griddle burners are exempt from the provisions.

In determining the thermal efficiency of regular and giant size top burners, the specifications call for 4 pounds and 10 pounds of 60 degrees F water, respectively, to be heated to 200 degrees F, and the amount of gas consumed, measured and recorded. Top burner performance is then calculated on the basis of the heat absorbed by the water and the test vessel and the heat content of the gas used. A similar quantity of water is pre-

heated over the top burner just prior to the test run.

In conducting this test, a new standard thermal efficiency test vessel was specified. It is an 8-quart, approximately 0.050 inch thick, straight sided, covered, aluminum cooking utensil with a flat bottom having a 1-inch round edge. The inside depth is 6½ inches and the inside diameter is 9½ inches. The commercially available 8-quart Mirro sauce pot, 518M, may be used as the test vessel.

The provisions of this procedure will be applied to domestic gas ranges and built-in cooking units submitted to the A. G. A. Laboratories for approval following the effective date of the standard. Equipment manufacturers, however, may have the necessary test work conducted by the Laboratories any time in advance of the effective date.

Proposed ASA revisions on gas piping and appliances distributed

Proposed revisions to the American Standard Installation of Gas Piping and Gas Appliances in Buildings, ASA Z21.30-1954, were recently distributed by the A. G. A. Laboratories to the gas industry and others for review and comment.

The proposed changes were prepared by the Subcommittee on Requirements for Installation of Gas Piping and Gas

Appliances in Buildings. All comments received will be reviewed by this group prior to the adoption of the revised provisions as American Standard.

Z21.30 is being editorially revised for clarification where necessary and to bring the standard in line with recent installation experiences. The venting section has been overhauled. Provisions covering installation of built-in domestic cooking

units, smokeless-odorless incinerators, domestic clothes dryers and unit heaters with reduced clearances to combustible construction have been included. Also, the standard is being revised to include piping and appliance installation practices applicable to undiluted liquefied petroleum gases.

Copies may be obtained from the A. G. A. Laboratories.

Labs mail proposed ASA requirements for air conditioners

Suggested American Standard approval requirements for gas-fired air conditioners of the absorption type were recently distributed by the A. G. A. Laboratories to gas utilities, equipment manufacturers and others for comment.

In view of the increasing emphasis of the industry on gas air conditioning, a special working group of the ASA Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee, prepared suggested national standards for the gas-fired absorption type cooling air conditioner. The A. G. A. Approval Requirements Committee at its March 1958 meeting, reviewed the suggestions of its

working group and authorized the distribution of the proposed standard for industry review and comment.

Comments received, however, are to be reviewed and alterations made in the proposed text where deemed necessary by a newly formed subcommittee of the Approval Requirements Committee before the proposed standard is finally adopted by the parent group for submittal to the American Standards Association, Inc., for approval as an American Standard.

The proposed standard in its present form applies to gas-fired absorption cooling air conditioners for indoor in-

stallation, which are designed to supply cooled air or chilled liquid to spaces remote from or adjacent to the appliance location. Expansion for coverage of other types can be expected as new systems are developed and marketed.

The proposed standard as prepared is similar to the standards for heating units with modifications to cover various features peculiar to air conditioning units. It has been kept broad in coverage so as not to hinder possible future developments.

Copies of the proposed standard for review and comment may be obtained from the A. G. A. Laboratories.

For men only



About 100 civic leaders took to the range as Northern Illinois Gas Co. sponsored its first Men Only Cooking School. Among those present was an attorney who prepares about 2,000 steaks a year for various civic groups as a hobby. In photo are (l. to r.): James Skinner, E. Carl Sorby of Roper, H. A. Diekmann of the utility

Industrial relations

(Continued from page 9)

a majority of all the employees in the bargaining unit, both union and non-union, voted by secret ballot on whether to accept or reject the company's last offer or any subsequent offer. The union strenuously objected to these counterproposals and, although the parties were able to compose other disagreements, called a strike in an effort to get the employer to abandon them.

The Supreme Court drew a broad line between "mandatory bargaining" and bargaining. Mandatory bargaining is bargaining over "wages, hours, and other terms and conditions of employment." It is "mandatory" because the Act specifically states that an employer and the representative of his employees must bargain in good faith concerning these specific items.

The Act also states that this obligation does not compel either party to agree to a proposal or require the making of a concession. Therefore, neither party is legally obligated to yield when bargaining over wages, hours, and other terms and conditions of employment. However, the Court said, this does not license the employer to refuse to enter into agreements on the

ground that they do not include some proposal which is not a mandatory subject of bargaining. On the contrary, a refusal to contract because the other party will not accept a proposal outside the scope of mandatory bargaining constitutes a refusal to bargain on subjects that are within the scope of mandatory bargaining.

The Court pointed out that its interpretation does not necessarily limit bargaining to "wages, hours, and other terms and conditions of employment." The parties may lawfully propose clauses concerning other matters. However, they cannot lawfully insist upon them as a condition to any agreement.

The Court then ruled that both the ballot and the recognition clauses proposed by the employer were outside the area of mandatory bargaining. The ballot clause settles no term or conditions of employment—it merely calls for an advisory vote of the employees, the court said. Unlike a no-strike clause, which regulates the relations between the employer and the employees, the ballot clause deals only with relations between the employees and their union. Moreover, it weakens the "independence" of the union and enables the employer, in effect, to deal with his employees rather than their statutory representative.

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The Gas Pavilion Exposition at the World's Fair in Brussels is located in front of the main reception hall which is the center of the entire exhibition



Compressors, high capacity meters and photos of dispatching stations are part of the exhibit's features. Visitors from many nations have seen the display



Included in the exhibition are drying appliances with infrared panels, oven for thermal treatment with controlled atmosphere and many other gas products

Gas Pavilion now on view at Brussels

When you visit the World's Fair in Brussels this summer, be sure to visit the Gas Pavilion Exhibition.

The pavilion is the result of collaboration between Belgian, French and German gas utilities, and is conveniently located in front of the main reception hall.

The exhibit is intended to give information to the public about the fundamental problems of the gas industry. Besides a model full-scale coal mine, showing the gallery methane recovery process, small scale models of coke-oven plant, and reforming plants, there are also models of a modern coke-oven plant and illuminated panels showing the auto-thermic conversion of refinery gas, catalytic conversion of fuels and the reforming of propane.

Also shown are compressors, high capacity meters and photos of dispatching stations.

Distribution is represented by standard valves and governors as well as pipes and different types of services and gas meters. A lively diorama highly illuminated shows the 24-hour cycle of a town's gas distribution system emphasizing the different loads.

An animated cut of underground storage with injection of gas in summer and withdrawal in winter completes this general view. Domestic and industrial gas appliances are also represented.

In addition, there are drying appliances with infrared panels, and installation for meat processing, oven for the thermal treatment with controlled atmosphere and gaseous case-hardening, a steam-press with incorporated steam generator, a hot water boiler of great capacity for restaurants, and many other items.

*A. G. A.'s PAR research program is designed
to meet the ever increasing needs of the gas industry;
here is a list of projects underway in 1958*

Research in review

By T. L. ROBEY

*Director of Research
American Gas Association
New York, New York*

Research can be defined as the application of known or new techniques to the solution of current problems and to apparent future needs. What are the gas industry's problems and needs?

In utilization, there is the constant demand for new and improved domestic appliances; the need to design and develop equipment so we may increase the important industrial and commercial load. And, of course, there is the big item—more gas air conditioning equipment.

In gas operations, synthetic gas production is of major concern. Alternate sources of gas must be available when diminishing long term natural gas supplies threaten to curtail the growth of the industry. Means of combatting the ever rising operating and maintenance costs of distribution systems are paramount.

In pipeline research, gas production and storage, pipeline design and construction, pipeline operation and maintenance all require continued attention to improve efficiency, cut costs, and insure safe operation.

There is also the need for more basic knowledge. Information which must be

tapped and harnessed to serve as the basis for the future growth. The unlimited appetite for more basic data may be described by comparing man's knowledge to a newly graduated engineer—he doesn't become aware of how little he actually knows until he has worked for five years or so—and then he really wants to know more.

These are some of the problems and areas of work confronting us. Now where does the research program stand?

In domestic utilization we have improvement projects on ranges, water heaters, incinerators, clothes dryers, and related subjects such as ignition and venting. Radiant heat is being applied via the Schwank burners to ovens and broilers; initial tests have indicated substantial speed-up in cooking time and less heat loss to the kitchen. Demonstration prototypes will be available this year. Next there is an integrated wall, a very nicely engineered integration of house heating, water heating, refrigerating, cooking and as a bonus, a laundry dryer. It takes its air from outside and delivers the products of combustion, etc., outside without a chimney. It was developed for the mass builder.

In the industrial and commercial field improved ranges and ovens are being developed. Investigations have been completed on high speed gas heating of metals, and application of gaseous fuels in the vacuum heating field. In order to provide industrial furnaces of better design to the mutual advantage of user and gas supplier, one project is actually op-

erating and accumulating data on a small industrial furnace.

The air conditioning program was initiated in 1954 to develop gas air conditioning equipment with the intention of interesting and selling manufacturers on the feasibility and potential of gas air conditioning; this effort was accelerated a year ago in order to develop operating prototypes. The program is on schedule and much enthusiasm has been generated within the gas industry and equipment manufacturers. Three prototypes have already been demonstrated and the initial response has been excellent. Negotiations for further development are now underway with several manufacturers.

The three major developments are:

1. A major breakthrough has been made in the Swiss open cycle sorption unit. This unit utilizes the oldest form of cooling, features a unique dehydrating means, a cooling coil and an evaporative pad to provide cool dehumidified air to the house. The developers estimate the initial cost for a year-round, three-ton unit under \$1,000 with additional cost reductions expected as production increases and experience is gained.

2. An improved absorption system prototype developed by the Southwest Research Institute which utilizes a circulating pump and a heat recovery two-effect generator. This prototype has operated satisfactorily with a coefficient of performance of 0.75, or about a 50 per cent improvement over similar equipment.

(This paper was presented by Mr. Robey during the combined Operating Section Conference held in New York City during May, 1958.)

3. The free piston engine-compressor unit. This is a new straight motioned, integrated hermetically sealed air cooled unit. It represents a simple, potentially less expensive type of engine-compressor refrigeration unit than that provided by the crank shaft engine driven compressor.

In addition, five projects are continuing in 1958. We will also continue to evaluate old and new ideas.

The accent in gas operations has been on synthetic gas production for peak and base load operation. In recent years, we have developed at the Institute of Gas Technology a wealth of information on the subject of gasification.

Of primary interest is the pipeline gas from coal projects. The production of pipeline gas is being attacked in two ways: First, there is the synthesis gas method in which CO and H₂ are made from coal, purified and then passed over a fluidized nickel catalyst to produce methane. A coordinated pilot setup has been built and operated for about two years.

The second approach is the hydrogasification of coal. Following bomb tests a bench scale continuous pilot unit is now finished and operating under the high pressure, high temperature conditions necessary.

The use of oil shale for hydrogasification is interesting and next year's plans indicate work on this fuel. It would appear from preliminary work that more of the hydrocarbon can be extracted by hydrogenation than other ways and there is lots of oil shale.

After a number of exploratory surveys and consultations, two projects have been undertaken in the field of radiation. They are the irradiation of methanation catalysts and molecular excitation of synthesis gas to form methane.

Increasing attention is being given to distribution system problems. Of course, leak prevention and detection are of prime consideration. In odorization, the study of soil adsorption of odorants has turned up some very interesting and useful data.

In pipeline research there is the work on secondary stresses in line pipe, that is the stresses in addition to the hoop and over-burden stresses. We are working toward the elimination of these sometimes large and often unsuspected loadings. The problem of noise at metering and regulator stations has been stud-

ied. A gas stream acoustical filter design to eliminate this noise has been developed and will be applied in actual service.

Also, some work is being supported at the High Altitude Observatory at the University of Colorado, where an attempt to relate sun spot activity to long range weather forecasting is being undertaken. This program is tied into the International Geophysical Year and favorable publicity has been obtained.

Under special research, several fundamental studies are underway in regard to the theory of combustion and flames. Also, we are keeping abreast of developments in the areas of solar energy, fuel cell, atomic energy, and other subjects of vital interest to the gas industry.

So far I have mentioned some of the problems and some of the research conducted in response to these industry problems both current and for the future.

Some 250 gas utility and pipeline companies comprise the managing and project supervising committees. They decide the what, where, when and how much. The A. G. A. staff implements and coordinates their decisions.

It is your program and so we solicit your support.

1. Tell us what you want.
2. Join the work by serving on a research committee.
3. Help us raise the dollars.

Air Conditioning Research

The accelerated PAR air conditioning research program has had as its goal the development of at least three projects to operating laboratory prototypes for demonstration to interested manufacturers at the earliest date possible. The purpose of such showings is to demonstrate to the manufacturers the feasibility of the various air conditioning units as well as to provide them with all technical details so they would in turn take over the project and carry it through field test, etc., to ultimate commercial production.

Good progress along these lines has been and is being made as follows:

ZX-15

Lizenzia (Swiss) unit:

This open cycle adsorption system air conditioning unit was demonstrated to manufacturers late in 1957 and licensing negotiations are now underway. Additional development work has been carried out since the demonstration which, it appears, will make it even more attractive from the standpoint of first cost and operating characteristics.

ZQ-18

Improved absorption unit:

A demonstration of this unit, developed by the Southwest Research Institute, was held the middle of January. At that time, ten potential manufacturers were provided complete details of the unit which utilizes a double-effect generator and circulating pump and has shown a coefficient of performance of 0.75 during test. Preliminary licensing negotiations are now underway.

ZG-4

Free piston engine-compressor unit:

This unit was demonstrated to interested gas industry and engine manufacturers during the middle of March. The unit has reached the laboratory prototype stage and has been operating in a refrigeration system at a coefficient of performance of 0.65 at three tons capacity. It offers the potential of design simplicity, low first cost, attractive efficiency, low maintenance and low noise level.

ZX-24

Long-life engine development:

A test prototype engine incorporating the improvement developed by Continental Motors now has in excess of 4000 operating hours. A limited number of the engines will be field tested this summer in air conditioning units. Further development on such components as ignition system is continuing.

ZB-22

Open-cycle wet sorption system:

The present laboratory development phase is completed. A phase report is being prepared for study by the Task Group to determine what future steps should be taken.

ZA-25

Facility for testing air conditioning units:

The improved absorption prototype unit is now undergoing tests in the test facilities and a report will be forthcoming. Other units will be tested as they become available.

ZG-29

New fluids for absorption systems:

The project, whose aim is the development of new fluids or combinations of fluids for use in air cooling absorption systems is continuing.

ZG-31

Evaluation of external-combustion air pump:

An evaluation of an externally fired air pump or compressor for use in an air conditioning system is underway.

In addition to the above, the following projects are underway and will be continued:

- (1) Unitary design of 25 ton engine driven air conditioning units,
- (2) Study of fluids for jet-type units.

Special Research

ZB-3

Fundamentals of combustion:

This project is a long range program designed to develop the fundamentals of combustion and flames. In this phase we will study the interaction of fuel-rich aerated flames and the surrounding atmosphere; to define the structure of fuel-rich flames and the dependence of this structure on flow and composition factors.

ZQ-13

Fuel cell:

This study is of a continuing nature, primarily designed to keep abreast of new developments. Several of the many companies interested in this field have made significant gains over the long period of time that work has been going on. However, the need for our entrance into this field is not indicated at this stage.

ZO-19

Multimatic Wall:

A full-scale working model has been constructed and is now in the hands of the PAR Promotions Committee. The model has been demonstrated to builders and manufacturers. The model has all gas appliances—washer-dryer, oven, broiler, top burners, furnace, refrigerator, and water-heater—assembled in one integrated unit.

ZC-20

Chemistry of very rich flames:

Also a part of the fundamental work on combustion and flames, the objectives of this project are to obtain and evaluate basic chemical information on the formation in rich flames of "yellow" emitters and toxic noxious gases such as CO, and to identify smoke limits of gaseous fuels for the purposes of determining circumstances for carbon deposition in gas appliances.

ZG-26

Gas powered fan:

The purpose of this study is to devise a gas-operated device for circulating air in a heating and/or cooling system. The first phases consist of evaluating the more obvious methods of converting heat energy to the circulation of air.

Domestic Gas Research

Cooking

DA-2-C

Study of domestic range top section design:

It is felt by many segments of the gas industry that improved operation and appearance of gas range top sections would add much towards improving the competitive position of gas ranges. It is the objective of this project to investigate the design features of gas range top sections and to correlate these features with improved performance, appearance, cleanability, safety and effectiveness. New ignition systems as

well as grate, aeration bowls and burners design are being studied. A full year's work is scheduled to continue the activities underway.

DA-3-C

Development of improved domestic gas ranges:

It is the purpose of this project to aid in reducing the time lag between research program results and their incorporation in contemporary ranges. Advances developed in other projects under this group are being coordinated, constructed and made available for demonstration units. An improved "nickel" burner, the H-P burner is being installed in several field trial ranges for evaluation purposes. Latest advances in research are being carefully evaluated for inclusion in a demonstration program.

DA-4-C

Development of flexible heat resistant gas appliance connectors:

It is proposed, in the conduct of this project, to investigate materials and methods for connecting gas appliances by flexible conduits which will provide satisfactory service under varying conditions of temperature, flexing, and gas composition. Phase I of this project has been completed and tentative specifications for a superior flexible connector have been developed. Phase II is underway. It will encompass the development of a connector which will satisfy the specifications developed.

DA-5-C

Study of domestic range broilers and ovens:

This project is aimed at determining how gas can best be employed for baking and broiling purposes. Competitive pressures have emphasized the need for new concepts in designs of ovens and broilers.

DA-6-C

An investigation of various methods of attaining reduction of cooking operation heat losses to the surrounding atmosphere:

Air conditioning in the home is becoming increasingly prominent. In view of the possible effect cooking and heating losses may have on the air conditioning load and comfort conditions in the kitchen generally, research in these fields has been initiated. It is proposed to examine and evaluate possible means for reducing these heat losses to the kitchen. The first phase of the study involving an engineering examination and evaluation of the problem is underway, after which should the examination develop logical paths for additional studies, such a program will be undertaken.

DA-7-C

Combination top burner and thermostatic control design investigation:

Experiences with thermostatic top burner controls have indicated the need for investigation of a number of factors pertaining to the application of thermostats to range top burners. Such factors as leakage and

poor burner control have been expressed by industry members as points which are being researched in order that we may have a continuing improvement in this very important range development.

Water heating

DA-2-WH

The application of heat to domestic gas storage water heaters:

The objective of this project is to extend basic burner design information with regard to the burners' environment in domestic gas water heater combustion chambers. High speed water heater designs have been evaluated and a prototype constructed and tested. Similar development of a table top design water heater was completed. Corrosion testing of the former model is now being terminated. Remaining aspects of design principles are being evaluated.

DJ-5-WH

Problems related to cathodic protection of gas-fired automatic storage water heaters:

Greatly increased use of magnesium anodes in gas domestic water heaters has raised a number of problems, the answers to which are not available from anode manufacturing sources. Studies underway were aimed at obtaining these data in order to strengthen the competitive position of the gas water heater. The work underway has been carefully aimed at avoiding duplication of previous efforts.

DA-6-WH

Investigation of non-integral storage tanks and water heating devices and other non-conventional type water heaters:

Information from the home builder industry appears to indicate that small home design may necessitate removing the water heater from the basement or utility room. This project was developed to obtain information on the feasibility and desirability of utilizing a separate heat exchanger in storage means for domestic water heating and also to evaluate nonconventional designs such as under the counter units, etc. The initial phase of the project which has been completed pertained to an engineering desk study and evaluation of the factors involved. This study determined that there was considerable merit in extending the project to cover laboratory designs and work.

Heating and air conditioning

DA-5-HA

Investigation of elements of gas appliance vent system design:

Committee discussion indicated a desire to include in a single venting project all of the remaining miscellaneous factors which had not yet been investigated in previous studies. This study will complete our original six point program for venting research. One of the major facets of the investigation, that of multiple flue connection, has been essentially completed. Work is continuing on vent terminal studies and other aspects of the outline.

DA-6-HA

Design factors of gas heating appliances for more effective use of heat exchanger surface:

This project is a recommended extension of studies conducted and reported in Bulletin 63. It is aimed at aiding the heating appliance designer to produce a superior product and to help him design unusual heat exchangers which will be called for in combination heating and cooling appliances.

DG-7-HA

Cyclic temperature effects on stress fatigue of heat exchangers:

Heating equipment design engineers have indicated that considerable trouble has been experienced in the past in the designing of heating equipment, even though the best available metals and materials were employed, because under conditions of design the factor of stress fatigue developed by cyclic temperature operation has caused failure of the heat exchangers. It is hoped in this investigation to develop those factors which will enable a design engineer to avoid these pitfalls and problems which in some cases may also occur in the field.

General Utilization

DA-2-GU

Study of more effective use of secondary air to support atmospheric gas burner flames:

Considerable atmospheric gas burner research has been devoted to increasing in proportion, primary air induced through air mixers, and a substantial technique for increasing the quantity of primary air has been developed. In this project emphasis is being shifted to more intense use of secondary air, a field that could lead to shorter, harder flames and a reduction in size of the present conceptions of combustion spaces. Studies have proved the importance of the recirculation patterns in the combustion chambers. Based on this phenomena theories are being evolved which would resolve means for properly handling secondary aeration.

DA-6-GU

Ignition of gases:

This project is aimed at investigating the problem of ignition from both the fundamental as well as applied aspects. Studies are being conducted in the fields of low Btu pilot design and operation spark ignition and analyses of other methods.

DG-7-GU

Oscillations and pulsations in gas and oil-fired domestic heating equipment:

Appliance designers had reported difficulties in eliminating resonant noises from some of their newly designed equipment. There appeared to be a need for information on practical methods of avoiding these resonant noises. This project was undertaken as a cooperative investigation with the American Society of Heating and Air Conditioning Engineers and the Oil Heat

Institute. It does not duplicate any previous work. Investigation thus far has uncovered the probable means or phenomena of the pulsations and oscillations. This theory is now being checked with regard to practical means for avoiding this problem. A final report is being written.

PDC-3-GU

Fundamentals of gas burner performance:

This is an extension of studies initiated under Project PDC-3-GU. The investigation is aimed at supplementing existing fundamental information on combustion characteristics of fuels with data on practical burners and incorporating appliance design.

DA-8-GU

Determination of factors causing lint collection on the under side of burner ports:

In various parts of the country reports were received indicating burner malfunction due to lint and dust collection on the under side of burner ports. Satisfactory means for accelerated light tests have been devised and studies are proceeding to develop the factors involved and practical methods for reducing the linting tendency.

Incinerator Research

DG-3-M

A study of effluents from domestic gas-fired incinerators:

This study was initiated in an effort to determine comparative quantitative data on improved incinerator design versus contemporary designs. This project is expected to be completed in 1957. However, it is not known whether difficulties will be encountered and more extensive studies necessary. On this basis a contingent request has been proposed for 1958.

Industrial and Commercial Gas Research

I A-5

A study of various methods of heat application to commercial range heavy duty top sections:

It was the objective of this study to investigate the possibilities of appreciably increasing the rate of heat release of commercial range top sections either by the use of newly designed atmospheric burners or by the use of power burners. Research on all the varieties of top sections including the open top, uniform hot top, center-fired hot top and fry top sections have been completed. All have been reported upon except the fry top range. A report on it is being written and edited prior to printing and distribution to the industry.

I K-7

A study of the effect of heating rate by gas on metal flow characteristics or plasticity and die wear:

It is the purpose of this project to provide data on the effects of fast gas heating

rates on hot forming, namely, improved plasticity for a low resistance to deformation and reduction in scale. Because of unforeseen technical evaluation problems, work was brought to a head and a progress report printed and distributed to the industry. Additional effort has been expended in an attempt to resolve these problems. This effort has been completed and the final report drafted. The report will be printed and distributed to the industry in the near future.

I A-9

Determination and control of proper oven environment for baked foods:

Studies under this project are aimed at the determination of the heat-atmospheric conditions best suited for the cooking of various baked foods and of methods of supplying these optimum conditions with gas-fired equipment. Very appreciably decreased baking times, as much as 50 per cent or more, have been obtained and further study is being actively pursued. A second experimental research prototype has been developed and constructed. It is aimed at providing greater speed and greater flexibility through proper design and advanced use of forced convection and radiation.

I K-10

The influence of wall radiation and the over-all heat transfer problem of high temperature industrial furnaces:

This fundamental study is aimed at developing information and data on the factors involved in the transfer of heat in furnaces from gaseous flames, including emissivity and radiation. The project has been completed and the final report is being processed.

I V-11

Feasibility study of the use of gas fuel for the vacuum or inert gas processing of metals:

The use of vacuum in metallurgical heat applications appears to be growing steadily in significance. It was desired to determine how gas fits into this picture. An engineering survey and technical evaluation was initiated. A final report is being edited prior to printing.

I A-12

Kitchen ventilation in commercial eating establishments:

Lack of basic design information for commercial kitchen ventilation, air conditioning loads and grease fires have pointed out the need for an investigation of this problem of ventilating kitchens. The project has recently been initiated.

ITU-13

Recuperation and regeneration of heat:

This project is an engineering survey and evaluation aimed at alerting the gas industry as to significance both now and in the future of these heat saving means. This project is scheduled for completion this year.

I A-14

Investigation of infra-red energy production with gas burners:

Recent technological advances in the infra-red heating picture indicate the need to re-evaluate the competitive factors involving gas both in applications where heating of this nature is employed and where gas convected heat has been adapted (e.g., paint drying). Studies are being initiated.

I

Development of a glass tank booster:

Competitive circumstances have indicated the need for evaluating the need and means for boosting glass tank production. This project is scheduled for initiation in the very near future.

Gas Operations Research

PDC-3

Combustion fundamentals of simple gases:

The new program is directed to study the effect of secondary factors of burner design and environment upon the primary flame characteristics in order to facilitate the design of burners tolerating wider ranges of substitute gases. This work has been carried on in the past under the joint auspices of the Gas Operations and Domestic Utilization Research Committees. However, gas operations have discontinued support in 1958.

PF-7

Improved gas odorant:

There are several phases of the Arthur D. Little project. The evaluation of seven dilute odorants (5-10 lbs/MMscf) considered to have a potential value has been completed. Results were negative. The field testing by a number of utilities of the olfactory carbon capsule instrument developed at Arthur D. Little has been completed and a report is being prepared. Work in 1958 will concentrate on the study of the odor characteristics of basic sulfur compounds to aid in the formulation of odorants.

PF-15

Gas conditioning: Analytical methods for suspensions:

The program encompasses the development and use of five instruments—thermal precipitator, light scattering photometer, cascade impactor, absolute filter, and millipore filter. Development work on the latter three is essentially complete. Three light scattering photometers are being obtained for testing under field conditions, along with a thermal precipitator. An exploratory study is to be initiated on the presence and movement of liquid particles in distribution systems.

PL-16

Standard gas for gas calorimetry:

The National Bureau of Standards has decided to continue the certification pro-

gram, including the procurement and distribution of the cylinders. For information write directly to the National Bureau of Standards, Chemistry Division, Washington 25, D. C.

PB-18

Production of natural gas substitutes: operation of cyclic regenerative oil gas pilot unit:

In addition to the equipment modifications already demonstrated, a further improvement over the conventional Hall process is the use of highly preheated hydrogen as a carrier gas. This results in significantly higher thermal capacities and increased substitutability. Work in 1957 indicated that the hydrogen can be produced internally by placing a reforming catalyst in each regenerator. The process is mechanically operable but catalyst life will have to be improved for commercial application.

In 1958, the following modifications will be evaluated: (a) combining cyclic-regenerative catalytic cracking and integral hydrogasification processes using two generator catalyst beds, (b) integral cyclic-regenerative hydrogasification process using one generator catalyst bed.

PB-19

Pipeline gas from coal: synthesis gas-methanation:

The process has been successfully demonstrated. An extensive catalyst program is now underway to develop a commercial catalyst. The additional process data necessary to develop a plant design and a realistic cost estimate will then be obtained.

PB-23

High pressure hydrogasification of residual oils:

It has been demonstrated that by this process a satisfactory 800-900 Btu gas can be produced from available petroleum fractions at a conversion approaching 100 per cent. For heavy residuals, a prehydrogenation step is required to prevent carbon laydown. This is not necessary in the case of distillate oils. The 1958 program includes the completion of the flow studies using cheap low grade crudes and the two step process.

PB-23A

Pipeline gas from coal: high pressure hydrogasification of coal:

Another route to pipeline gas from coal, this process is also to be explored sufficiently to indicate its potential competitive possibilities regarding large scale commercial operations. The fluidized bed pilot plant has been installed and shakedown runs completed. The unit will be operated with selected bituminous, sub-bituminous and lignite chars to obtain data on the effect of process variables.

PT-24

Storage of gas at the point of use:

The study has been completed by the

Stone and Webster Engineering Corp. and the final report has been distributed.

PB-26

The removal of odor bearing materials from natural gas by soil constituents:

The investigation at I.G.T. is to determine the relative absorption of different odorants by various types of soils. Completed tests have indicated the extreme effect of moisture in reducing the adsorption of odorants by various soils. Also, considerable variances are being obtained with the odorants being tested. Tests are being made with other odorants and soils at various space velocities and moisture saturation levels. The program is designed to aid in satisfying public service commissions that every possible effort is being made by the utilities to improve leak detection.

PB-27

Irradiation of synthesis gas to form methane:

The study "Survey of Applicability of Radiation to Gas Making Reactions" by Arthur D. Little (PF-27) has been completed. As a result of the findings of this study, Project PF-27 (extension) has been initiated to study the effect of high frequency discharges in forming CH_4 directly from H_2 , CO_2 , and CO mixtures. The test apparatus has been completed and work is now underway.

PB-29

Analysis of utility fuel gases by gas chromatography:

Tentative procedures have been developed and work continues on the analysis of mixtures containing H_2 , CO , N_2 , CO_2 , and CH_4 . Good comparison with mass spectrometer analyses can be obtained and at a fraction of the cost. The technology of gas chromatography has been advancing rapidly. However, instrument makers have not worked up specific procedures and techniques. Thus the 1958 program will include preparation of a bulletin containing procedures for analyzing the gases a utility generally encounters. The work will be continued far enough to allow selection and operation of equipment.

PB-30

Investigation of leak detection and prevention:

Considerable interest has been expressed in initiating projects to study distribution system problems. To determine what distribution problems are most pressing, an extensive survey in the form of visits to utility systems and a critical literature search has been completed. A report is being prepared. The scope of the surveys is very broad and will develop information on leakage, corrosion, equipment, and related topics. This information will be a valuable guide in the formulation of distribution research program.

PH-31

Mercaptan detection instrument:

Beckman Instruments, Inc. is developing

an instrument for the determination of the mercaptan content of odorized gas. Work is progressing satisfactorily. Two prototype instruments will be made available for field testing.

PB-32

Effect of nuclear irradiation on the activity of methanation catalysts:

I.G.T. has begun laboratory investigation of the effect of gamma radiation on increasing the activity of catalysts utilized in the conversion of petroleum and coal to gas. Initially, iron catalysts will be studied due to their high sulfur resistance and low catalyst activity as compared to the more commonly employed nickel catalysts.

Pipeline Research

NC-2

Phase relationships of gas condensate fluids:

Volume I of a two part monograph has been published. This book reports the test results, apparatus and techniques for a series of experimental investigations on the properties of hydrocarbon mixtures pertaining to the recovery of natural gas and condensates of underground reservoirs. In 1958 it is planned to continue organization and preparation for printing of Volume II. This entire program represents a total of 20 years work at the Bureau of Mines and a total expenditure of over \$1,000,000.

NC-3

Productivity of high-pressure oil and gas wells:

Studies of steady-state gas flow through a core of consolidated sandstone using nitrogen, a gas of low supercompressibility, have been completed in an effort to better predict performance of reservoir production. The results to date indicate that little deviation is indicated from the gas flow equation under the test conditions. The future work will involve less ideal gases, cores of different properties and transient condition of flow in an orderly progression from ideal conditions to more complex systems. The manuscript, "Theoretical Gas-Well Performance—Comparison with Field Data," is to be published this year.

NC-8

Study of deliverability of gas from underground gas storage reservoirs:

Data collected in a series of tests conducted on storage reservoirs have been used to calculate deliverabilities and these deliverabilities compared to the theoretical. A delivery rate, " Q_{10} ", has been proposed on the basis of the above calculations, which eliminated extrapolation of the back pressure curve and also gives a better measure of the ability of the well to deliver gas. The study of deliverability of gas from underground gas storage reservoirs to include testing and development of remedial measures for gas wells that are not producing efficiently represent the expanded scope of this work.

The future plan is to complete compilation of tests made to date in various underground storages and to release another paper on the effect of stabilization on the back pressure curve to determine skin effect. In addition, it is planned to study skin effect more thoroughly by laboratory testing of cores that have been polluted by various foreign matter that might be found in a storage reservoir.

NG-11 & NG-22

Branch connections and secondary stresses:

The "Branch Connections" report was published giving information which aids in the development of improved welding and design procedures for building pipelines. Subsequently, a survey of the industry for any reports of company sponsored research on branch connections was undertaken in an effort to make this information available to the entire industry. The secondary stress program continues in its consultant service to industry in an effort to aid in pipeline construction. The 1958 program includes the final preparation of a branch connections experience report and a summation of the work conducted by the secondary stress group.

NFX-12

Suspensions in natural gas:

The evaluation of gas cleaners has just been completed at the Ellwood City, Pa. test site. This was accomplished by actually placing the cleaner in the line and injecting a dust to arrive at an evaluation by monitoring the downstream gas flow. The final objective of this project is the improvement of gas cleaners. The report, "Investigation of Sampling Procedure Requirements," has been published. Future work will be concerned with a detailed study of the design of oil bath cleaners.

NB-13

Radioactive tracers for flow rate determination in gas pipelines:

Through the cooperation of participating companies, pipeline flow efficiency data were collected and an empirical formula developed which is now proposed for acceptance as a universal flow formula. The use of radioactive tracers for flow rate determination in gas pipelines is now being studied to develop pipeline efficiency test standards. The future of this program is the final presentation of the flow formula and development and refinement in the use of radioactive tracers.

NB-14

Interior surface coating of pipe:

The evaluation of materials used to coat the interior of pipeline has been completed and the final report is being prepared. This report is to present the various materials by a numerical rating scheme in order to present their relative suitability as interior coatings. With the preparation of the final report, the work under this project will be complete.

NQ-15

Orifice metering of pulsating gas flow:

The orifice meter error due to pulsating gas flow has been confirmed by using water as a flowing medium. On the basis of tests conducted, it is felt that this error can be accurately predicted and corrected on the basis of field data. The 1958 program is the development of a gas facility and a similar test program using gas as a flowing medium.

NB-16

Wear in pipeline engines and compressors: methods of measurement:

The determination of metal content of lubricating oil from main line compressor engines has led to an accurate prediction of wear in the case of straight mineral oils while detergent oils do not give this clear cut information. This program has been completed and the final report will be available soon.

NG-18

Line pipe research:

The current line pipe program is an investigation of crack initiation due to defects in the pipe. Weld cracks, dents and pressed V-dents are included in the study. The tests are to be run at various temperatures to give information on the effect of temperature on fracture initiation. The future work under this project will be a continuation of the current program studying various conditions of defects, pressure and temperature.

NX-19

Extension of range of supercompressibility tables:

After the accumulation of considerable data from cooperating companies and the study of these data, the range of the supercompressibility tables was extended, to include higher specific gravities and greater diluent, carbon dioxide and nitrogen content. Possibly there will be extension of the temperature and pressure ranges involved in the A. G. A. method.

NW-20

Pipe roughness study:

The study of the effect of pipe roughness on orifice metering is being conducted at the Naval Boiler and Turbine Laboratory. Two tubes and three orifices are to be tested during the course of this program. With the completion of the current tests, a final report is to be prepared and this work will be considered as completed.

NY-21

Long range weather forecasting:

This research is being done at the High Altitude Observatory at Harvard University and the University of Colorado and it is co-sponsored by a number of industries. This basic scientific research is contributing toward an understanding of the many subtle influences on Sun, on Earth with par-

ticular emphasis on solar variability as a possible cause of changes in weather, auroral, radio connections, earth magnetism, upper atmosphere physics, cosmic rays and other variable factors in the physical environment of man.

The gas industry is vitally interested in the weather aspects of the project because it is involved in natural gas production, transportation, storage and distribution which are sensitive not only to day-to-day fluctuations in average seasonal temperatures but also year-to-year fluctuations.

NQ-23

Noise abatement:

The work accomplished during 1957 under this project included a literature survey and field work at pressure reduction stations. The literature survey includes studies of local and state ordinances pertaining to noise control, the psychological and physiological effects of sound on man and the engineering aspects of noise abatement. The field work which was conducted at stations throughout the southwest, singled out the intermediate leader in the stations as the primary noise source. Future work will be to design a gas flow filter to be installed as a noise abatement method and then continue the study of compressor station and blow-offs.

NX-24

Pressure vessel research committee:

The Pipeline Research Committee supported the work of the Pressure Vessel Research Committee of the Welding Research Council during 1957. This work includes studies of the effects of high temperatures on steel, heat treating of steel, plastic fatigue of steel, design of pressure vessels including the effect of external loadings and a program on reinforced openings.

A. G. A. is now represented on the Executive Committee of the Pressure Vessel Research Committee.

NG-25

Determination of small leaks during a hydrostatic test:

A program of study has been outlined for consideration by the industry. After a survey of the industry, the final program will be outlined and the future work will be the determination of methods to aid in the determination of small leaks.

NX-26

Study of application of supercompressibility factors in electronic digital computers:

This project was undertaken in an effort to maintain the accuracy of the A. G. A. Supercompressibility Tables when they are used in modern business machines. The current activity is to request the individual manufacturers of business machines to help in this work of programming. The future of this program will be a detailed study of the problem from the viewpoint of each make machine.

Task group to study two-phase flow in long gathering lines:

A program of study to determine a pipe design for handling two-phase flow has been outlined for presentation to the API. It is hoped that the API will co-sponsor this research and make available data for a statistical study. Future work will be enlisting the aid of the API and firming up a program.

Reports and Bulletins

Domestic gas research and industrial and commercial gas research:

Research Bulletin No. 73

Heat Application to Gas-Fired, Portable Deck Bake Ovens.

Report on DJ-4-WH

Effect of Certain Variables on Corrosion of Gas Fired Domestic Water Heaters.

Research Bulletin No. 74

Principles of Draft Hood Operation and Design.

Research Report No. 1264

Performance Characteristics of Gas Ovens.

Research Report No. 1267

A Field Survey of Gas Appliance Venting Conditions—Part II.

Research Bulletin No. 75

The Design and Application of Impingement Target Burners.

Research Bulletin No. 442

Distribution of Air Within a Room for Year-Round Air Conditioning—Part II.

Research Bulletin No. 76

Research on New Designs for Range Top Burner Pilots and Valves.

Research Bulletin No. 77

Effects of Gas Composition and Burner Design on Flame Characteristics of Appliance Burners.

Gas Operations Research:

Institute of Gas Technology Research Bulletin No. 7

Gasification of Pulverized Coal in Suspension.

Gas Operations Research Report on Project PL-16

Accuracy of the Cutler-Hammer Recording Gas Calorimeter When Used With Gases of High Heating Value.

Gas Operations Research Report on Project PT-24

Gas Storage at the Point of Use.

Air Conditioning Research:

Arthur D. Little, Inc., Final Report, Project ZF-16

Residential Gas and Electric Heat Pumps.

Stanford Research Institute, Final Report, Project ZR-14

Utilization of Jet Pumps in Refrigeration Systems.

Institute of Gas Technology Research Bulletin No. 14

The Absorption Cooling Process.

Special Projects Research:

Research Bulletin No. 15

Fundamentals of Combustion of Gaseous Fuels.

Pipeline Research:

Battelle Memorial Institute, Tube Turns Branch Connections.

U. S. Bureau of Mines, Monograph 10

Phase Relations of Gas Condensate Fluids.

Gas Operations Research Report on Project PF-15

(Co-sponsored with the Gas Operations Research Committee)

Investigation of Sampling Procedure Requirements.

A. G. A., East Ohio co-sponsor booth



About 25,000 members of the American Foundrymen's Society attending a convention in Cleveland had the opportunity to see this booth co-sponsored by A. G. A. and East Ohio, and manned by East Ohio. Of particular interest to foundrymen is the application of gas to non-ferrous metal melting

Safety men stress operating role

The tenth annual Accident Prevention Conference set for Sept. 16-17 in Louisville, Ky., will stress the role of the operating man in the gas industry's safety program.

Leading men from each segment of the industry's operations have been secured to lead workshop groups in an effort to make the meeting more attractive to the operating man.

E. C. Baumann of the Public Service Electric and Gas Co. and chairman of the A. G. A. Accident Prevention Committee will be the presiding officer. Howard T. Jayne of the Philadelphia Gas Works is chairman of the Program Subcommittee.

The two-day meeting will be held in Louisville's Sheraton Seelbach Hotel.

A special feature of the conference will be an exhibit of safety equipment used in the gas industry. Exhibitors will be safety equipment manufacturers only.

Delegates will be welcomed to the conference by G. R. Armstrong, president, Louisville Gas and Electric Co. The first speaker will be T. A. Slink, chairman of the board, The Central Illinois Light Co., a company that has achieved outstanding success in controlling their employees' disabling accident experience.

The accident prevention certificate will be presented to member companies that reduced their disabling injury rate 25 per cent or more during 1957 over 1956. In addition, John H. DePew, chairman, National Safety Council Fleet Safety Contest, will present the 1957-58 Motor Vehicle Fleet Safety Contest plaques to winning company representatives.

The 13 companies designated to receive the A. G. A. Safety Achievement Award will be recognized and presented to the conference. Following the presen-



Chairman of Program Subcommittee of Accident Prevention Conference is H. T. Jayne



E. C. Baumann, Accident Prevention Committee chairman, will be presiding officer

tation delegates will visit the safety and fire equipment display.

The afternoon session will open with a demonstration on gasoline fires and their control by the Ethyl Corp. The Ethyl power show will be presented by E. A. Agnew. He will demonstrate the power of gasoline and safe methods developed by the petroleum industry for handling gasoline.

This will be followed by a demonstration entitled "Bell Hole Safety" by Hugh L. Baker of the Mueller Co., Decatur, Ill.

The second day will start with a workshop on employee safety problems in the gas industry. Charles R. Williams will preside. The areas of discussion will be divided into four groups. The groups and their leaders will be:

Group I—"A.S.A. Z16.1 1954. Its Interpretation and Application," Charles T. Cummings, safety director, Hope Natural Gas Co., Clarksburg, W. Va.

Group II—"Accident Investigating,

Reporting and Analyzing Procedures," B. J. Lorenz, supervisor of safety, Northern Indiana Public Service Co., and H. E. Holmes, safety director, Michigan Wisconsin Pipe Line Co.

Group III—"Selling the First Line Supervisor and Maintaining Interest in Safety," V. A. Howell, senior accident prevention coordinator, Long Island Lighting Co.; M. B. Travis, director of safety, Northern Natural Gas Co., and Stanley Owens, director of safety, Transcontinental Gas Pipe Line Corp.

Group IV—"Motor Vehicle Safety," W. A. Allred, safety engineer, Lone Star Gas Co.; George Claar, safety director, The Ohio Fuel Gas Co.; A. R. Kelliher, safety director, The Manufacturers Light and Heat Co.; and E. S. Beaumont, director of safety, The Peoples Gas Light and Coke Co.

The highlight of the final luncheon will be the speaker, Ollie James, a popular humorist well known in the South and Midwest. (Continued on page 28)

At the workshop following the luncheon, delegates will share with other men of similar interest and responsibilities the presenting and solving of their accident problems.

Delegates will be briefed as to procedure by A. L. Dowden, supervising engineer, public utilities, Liberty Mutual Insurance Co., Boston. The four areas of discussion and their leaders will be:

Group I—"Safe Practices in Distribution Operations," H. C. Jones, gas engineer, New England Electric System, and Joseph M. Devereaux, assistant manager, Philadelphia Gas Works Div., of U.G.I.

Group II—"Safe Practices in Customer Service Operations," Wilbur H. Weber, The Brooklyn Union Gas Co.,

and George Coates, manager, Customer Service Department, Southern Counties Gas Co.

Group III—"Safe Practices in Manufacturing Gas Operations," V. G. Volker, Central Hudson Electric & Gas Corp.

Group IV—"Safe Practices, Gas Transmission Operations," D. B. Sprow, vice-president—operations, Natural Gas Pipe Line Co. of America, and Theo Fortson, senior safety engineer, Texas Gas Transmission Corp.

A. L. Dowden will moderate the summary session.

The conference will close with a question and answer session titled "Let's Take Our Hair Down." Peter Barry, safety director, Rochester Gas and Electric Corp., will be moderator.

A.G.A.-PAR report cites year of achievement

A year of achievement is depicted in the combined A. G. A.-PAR 1957 annual report, recently distributed to A. G. A. member companies. The 48-page report with colorful cover contains, for the first time, a complete listing of PAR subscribers.

Cited as new and important ventures of the year were the gas industry's entry into national television, the major research breakthroughs in air conditioning and smokeless incin-

eration, publication of the Zinder Report, and the "White Christmas" appliance promotion featuring Bing Crosby.

During this year of striking progress, A. G. A. membership included 92 per cent of the nation's gas meters. Represented were 375 gas utilities, 590 manufacturers, 8 holding companies, 8 service companies, 7,146 individual members, and 40 associate members.

Other significant events during the year included expansion of the Gas Industry Development Program; the testing of approximately 5,000 appliances in A. G. A. Laboratories; the increase in the services of the Washington office; the start of two major financial studies and the publication of the first of a prospective series of 10-year financial forecasts; utilization work in the code and ordinance field; publication of 281 editorial pages on gas in outstanding service, shelter, and trade magazines; a 22 per cent increase in the number of motion pictures showing gas appliances; a record advertising impact of 200 million sales impressions; and additional public relations activities directed toward stimulating recruitment, investment, and private ownership.

During 1957, utility gas sales reached a record 74.36 billion therms, and revenues from ultimate consumers also reached a new high of \$4.014 billion.



HOW TO WIN FRIENDS FOR GAS
THROUGH AN ORGANIZED SPEAKERS PROGRAM

a PAR activity

FACE TO FACE, a down-to-earth handbook to guide

gas companies in establishing and operating an organized speakers program, is a colorful feature of a new Speakers Kit just made available by PAR Public Information. This 16-page "how-to-do-it" booklet presents practical pointers in concise form and uses the light touch in cartoon illustrations.

The Speakers Kit also includes six sample speeches which can be easily adapted for local use, and four background information studies including an up-to-date bibliography of A. G. A. materials suitable for speech purposes.

PAR Public Information plans to supplement the Speakers Kit from time to time with new sample speeches and revised statistical information.

Facts and Figures

(Continued from page 13)

Industrial production, as measured by the Federal Reserve Board index, was down 12.5 per cent from the same month last year. The index of industrial production (1947-1949 = 100) for April 1958 was 126, 18 points less than the index of 144 for April 1957. The Association's April index of gas utility and pipeline sales is 237.7 (1947-1949 = 100).

During the 12 months ending April 30, 1958, total utility and pipeline sales of gas aggregated 78,187 million therms, equivalent to an increase of 5.6 per cent over the 74,006 million therms consumed in the 12 months ending April 30, 1957.



*One way for all utilities to save money
is to get customers to "enclose that stub when paying"*

There's a hole in your pocket

By CLAUDE F. WAHLI

*Customer Accounting Manager
Knoxville Utilities Board
Knoxville, Tenn.*

It costs a lot of money to produce a utility service bill.

We spend huge sums of money on research and planning, and even a greater amount on machinery and personnel to produce these "cash registers" of our business. The result is that millions of bills are produced monthly. Some simply show the amount the customers owe. Others show meter readings or the date the meter was read. A few have an advertising message. Some are attractive while others are on the cheapest stock available. But the one thing on all service bills is an earnest plea on the cashier's stub asking the customer to "please bring this bill when paying at the office," or "please enclose this stub with payment by mail."

So it seems we have one difficulty that is common with all distributors, an amazing number of these little stubs are never used. This means there is a sizable "hole in our pocket" when our customers fail to use these carefully prepared cashier coupons by not sending them in with their payment or when they come to the office and ask for a duplicate.

Customer accounting people have found the problem of receiving checks without the stub to be most annoying. The probable reason is that no set simple procedure can be worked out. In any case, there are a great many industry people who would like to get customers to use the bills we send them.

To find out exactly how much of a problem exists, I asked 85 utilities what percentage of payments were received

without cashier coupons, and whether they considered it a problem. I also asked about the percentage of duplicate bills made at various offices. From answers representing 25 million customers, I found that 2 per cent asked for a duplicate bill. A quick analysis shows that this is a rather large number and if applied against all of the utilities in the United States (I believe the group sur-



The author says that the reason most people fail to use bills is because no simple procedure has been devised

veyed to be a representative group), it should amount to a sizable hole in our pocket.

Surprisingly, I found that not one utility of the 85 asked considered this a problem. Further investigation showed that the duplicate bill operation can be meshed with other duties our clerks perform. While it takes a great deal of time, this does not cause difficulty, and is such a routine matter that even the clerks pay little attention to it.

For those utilities which wish to reduce the number of duplicate bills, there are some simple tricks that may help. The Rochester Gas and Electric Co. prints on their duplicate a request to "please bring bill when making payment; it will avoid delays and errors." This helps emphasize to customers the importance of using the bill. We might also have service clerks, or duplicate bill clerks, ask the customer if they received their bill, and to please bring their bill when paying next month. This must be carefully done lest it affect our customer relations.

Some people resent any implication that we do not want to make them a duplicate. We must not overlook this angle in our zeal to help our office routine. If our customers want a duplicate bill, we must be prepared to give them one. I found that all utilities contacted do just this—no long line, no walking to the second or third floor. We are as interested in getting our customers a bill, even if it is a second bill, and getting them on their way, as the customer is in getting quick service. In my opinion, this problem should not be ignored, as I believe it constitutes a rather expensive operation.

As I previously stated, the companies contacted represent approximately 25 million accounts, and I found that 462,500 customers neglected to send their cashier stub along with their payment by check. What can be done about this? It is apparent that the message on the small cashier stub earnestly pleading for customers to enclose the coupon with payment by mail does not appeal to some people. Or perhaps the request is printed so small it can hardly be seen. So why not make the request in large bold type? This might help but other

methods are being tried by other companies and they report good results.

The one I like best is used by The Brooklyn Union Gas Co. When they receive a check without the cashier's stub they immediately send the customer a preprinted post card that reads like this:

**PLEASE TAKE A MINUTE TO
READ THIS**

Your recent payment is appreciated but it was received without the coupon from your bill.

Thousands of payments arrive in our mail daily and if the coupon from your bill is not enclosed with your remittance, your account may not be promptly credited.

Please make a point of returning the coupon part of your bill in the future. Your cooperation will be appreciated.

First, they have thanked the customer for his payment. They have told the

customer of the problem created, and suggested to him that his account may not be properly credited, and finally, they ask for his cooperation.

The Connecticut Light and Power Co. makes a form in duplicate, sending one to the customer and retaining a copy. They thank the customer for the exact amount of their payment and ask that he kindly include the cashier's stub with all future payments. There are several other companies including the Philadelphia Electric Co., Washington Gas Light Co., and Long Island Lighting Co., which use some variation of the above form. All are trying to emphasize the same things—crediting the correct account and the interruption of our normal office procedure by looking up large numbers of customers' signatures.

I find that the companies using this procedure have a very low percentage of this type of payment, and parenthetically, I found that some companies had a percentage as high as seven, and among these high percentages, none

used the messages I have described.

As a further suggestion, why not utilize our regular institutional advertising to remind customers of the importance of using the bill they receive whether paying at the office or by mail? This message could be tied in with our promotional activities and not appear to be nagging.

We can help our own cause by making our bills as attractive as possible. I believe in a colorful bill for two reasons. First, it is good public relations. Second, the bill has personality and stands out among other bills that may be taken out of the mail box, or mail slot, and laid aside and forgotten about until after payment date. I believe this also lessens the possibility of the bill being destroyed or carelessly tossed in the waste basket. This can be done by any company at little or no additional cost, whether the bill is on punch card, post card, or paper.

It behooves all of us to take every means we can to repair this "hole in our pocket."

Meet your Association staff



Robert J. Cutting

Coming as he does from a show business family, Bob Cutting might well call himself a quick-change artist. In the midst of writing a report to the Finance Committee, he is apt to have to change roles in split-second time, to settle such diverse matters as hiring a new switchboard operator or having the air conditioning regulated.

Variety is the basis of his work. As controller he supervises and reports accounting data to management and sets and coordinates departmental budgets. As office manager, he supervises methods and procedures, personnel records, and in general regards himself as a "one-man complaint department." Specific A. G. A. functions of which he has charge are clerical, order and billing, reservations, switchboard, purchasing and stores, and mail room.

Mr. Cutting joined A. G. A. as auditor and office manager in 1956. As a graduate of evening courses at Pace College, he worked seven years for the motion picture industry and two years for a paper box manufacturing company. He also served in the Navy for a year, "and during that time never saw a ship despite my five years' experience as ship-

fitter's supervisor and other maritime employment over the years."

A native New Yorker, Mr. Cutting now lives in Roslyn, L. I. His hobbies are ham radio—"I've been a licensed operator by the name of W2-KGI for the past 21 years"; sailboating—"but motor boats make me seasick"; and hi-fi—"I built my own set." Personnel at home are his 15-year-old daughter, 5-year-old son, and wife Kay—"to whom I leave full charge of domestic methods and procedures, although I do retain charge of coordinating and setting the budget."

Mr. Cutting's theories on managing an office run like this: "You need rules as a framework, but you can't run an office by a rule book: You have to make an individual decision to any particular problem as it arises, based on its merits with allowances for individual and distinct personality differences."

He feels that harmony among personnel is vital to a smoothly functioning organization, and is likely to tell a prospective employee that "Fifty per cent of your job is getting along with others."

And, in the ability to get along with others, Mr. Cutting himself rates top billing.

AMA survey shows that most managements expect to maintain their sales volumes this year

Economic challenge is hurdled

A majority of the nearly 700 member company presidents recently surveyed by the American Management Association expect that their firms will at least maintain their sales volumes this year, although many are less hopeful about the profit outlook. And, the survey results show, most of them are taking positive steps to meet the economic situation.

Nearly all of them are planning to spend as much or more than last year on direct sales effort, research and development, and advertising and sales promotion. A majority are planning to spend as much or more on capital expansion. Many are going in for cost reduction, development of new products, product improvement, or other measures to improve business, including just plain harder work.

A group of presidents of AMA member companies were surveyed about the economic outlook and their firms' responses to it in preparation for the Association's Economic Mobilization Conference, held in New York May 19-20. The study was made by AMA's Management Information Service and Surveys group. By the cut-off date for tabulation of the results, 688 completed questionnaires had been returned.

The organizations represented by these replies have a total work force of 4,931,691, which was 8.6 per cent of civilian nonfarm employment in April. Since the

participating companies are well distributed throughout the United States, the survey replies may be a fairly representative sample of opinion among presidents of American corporations.

As is shown in the table covering expectations, only about a fourth of the presidents surveyed expect 1958 profits to exceed those of 1957 and more than half expect them to be lower. Less than half, however, expect lower sales volume and more than a third are looking for an increase in sales.

Squeeze on profits

This evidence of a squeeze on profits is confirmed by such comments as this one from a president who expects the same sales volume with lower profits in 1958: "Government and big business policy and labor thinking have resulted in a squeeze play between increasing (or

static) costs of raw materials, continuing increased wages, and severe competition, which has kept our selling prices down. The result for medium-sized firms such as ours is prosperity without profit."

The profit picture varies, of course, among industries and among regions. A Southwestern president said his company had "not yet felt the effects of a recession." The head of a fuel service organization classified his business as "depression proof." A president in the textile industry, on the other hand, commented, "A fair comparison of what our industry is up against" would be for a Sunday golfer "to play golf every day against Ben Hogan without a handicap."

One executive said that the "gratifying" results of a "very searching cost reduction program" suggested that his company might be able to reverse his forecast of lower profits and end the year with higher profits "in spite of the

EXPECTATIONS

As of the present moment, our company in 1958 as compared with 1957 is expecting:

Total:	Number of Companies 688	Per Cent of Companies 100	Number of Employees 4,931,691	Per Cent of Employees Covered 100
SALES VOLUME				
Larger Sales Volume	242	35.2	1,660,654	33.7
The Same Sales Volume	119	17.3	736,219	14.9
Less Sales Volume	324	47.1	2,517,575	51.1
No Answer	3	0.4	17,243	0.3
PROFITS				
More Profits	185	26.9	1,064,584	21.6
The Same Profits	107	15.6	1,029,048	20.9
Less Profits	392	56.9	2,822,052	57.2
No Answer	4	0.6	16,007	0.3

(Reprinted from the June, 1958 issue of "Management News," an American Management Association publication. Copies of this article are available in reprint form from the American Management Association, 1615 Broadway, New York 38, N. Y. Price: 25 cents each.)

PLANS

As of the present moment, our company in 1958 as compared with 1957 is planning to spend:

Total:	Number of Companies 688	Per Cent of Companies 100	Number of Employees 4,931,691	Per Cent of Employees Covered 100
CAPITAL EXPANSION				
More	197	28.6	974,692	19.8
The Same	177	25.7	1,375,070	27.9
Less	304	44.2	2,535,494	51.4
No Answer	10	1.5	46,435	0.9
ADVERTISING AND SALES PROMOTION				
More	282	41.0	2,232,897	45.3
The Same	272	39.5	1,792,050	36.3
Less	129	18.8	846,019	17.2
No Answer	5	0.7	60,725	1.2
RESEARCH AND DEVELOPMENT				
More	340	49.4	2,578,026	52.3
The Same	303	44.0	2,199,853	44.6
Less	37	5.4	123,162	2.5
No Answer	8	1.2	30,650	0.6
DIRECT SALES EFFORT				
More	443	64.4	2,973,221	60.4
The Same	216	31.4	1,649,342	33.4
Less	23	3.3	119,978	2.4
No Answer	6	0.9	189,150	3.8

lower sales volume." Another reported, "In January we spent over \$78,000 on a direct sales campaign against the advice of almost everyone. As a result, we have enjoyed the largest first three months in the history of our business."

Opinions also varied among those who ventured to predict when the economic outlook would brighten. Two said they expected an upturn next year; one, "soon." Another, however, declared that "this business recession" was "gathering momentum."

Although 1958 expenditures at least equal to those of 1957 are planned by a majority of the presidents in the four categories of capital expansion, advertising and sales promotion, research and development, and direct sales effort, there is considerable difference between their plans for capital expansion and their plans in the other three categories. This can be seen in the table on plans.

The expenditure plans of the 185 presidents who expect higher profits in 1958 differ from those of the 392 presidents who expect lower profits. (These data are not included in the tables.) About two fifths of the optimists will spend more on capital expansion than in 1957; about one fifth, less. Only about one fifth of the pessimists will spend more on capital expansion; more than half will spend less.

Much the same pattern holds for the

other categories of expenditure. More than half of the optimists will spend more on advertising and sales promotion, compared to less than a third of the pessimists; more than a fourth of the pessimists will spend less on advertising and promotion, compared to less than a tenth of the optimists. In the category of research and development, more than half of the optimists and less than half of the pessimists will spend more; more than 6 per cent of the pessimists and a little more than 3 per cent of the optimists will spend less. On direct sales effort, nearly three fourths of the optimists and nearly three fifths of the pessimists will spend more; nearly 5 per cent of the pessimists and less than 2 per cent of the optimists will spend less.

List economy improvements

A number of actions was listed by the 128 presidents who reported what measures they were taking to improve their companies' economic outlook. Well in the lead was cost reduction, including layoffs, shortening of the work week, and methods improvement.

One company has reduced its work force by 10 per cent and has cut work hours, salaries, and wages 12½ per cent. One president reported a 45 per cent reduction in all expenses, including an

11 per cent cut in the office payroll. One president described his method of cost reduction as "Parkinson's law in reverse," having fewer people do more work.

Some disagreed. One company is "attempting all reasonable means of cost reduction, but no wage or salary decreases." One said, "Maintaining our work force plus well qualified additions to it."

One is even "adjusting wages and salaries upward" and planning to install an incentive plan.

Also frequently mentioned were improved marketing or sales effort, better planning and/or organization, and accelerated research and development, particularly that aimed at new products. One large company is planning to introduce several new products and is completing an organizational planning project that includes decentralizing and divisionalizing operations.

Another large company is spending less this year than last year on advertising, sales promotion, and research and development. However, its president said, because of an intensive effort to improve efficiency "I am thoroughly convinced that the reduced budgets this year are going to be more effective than were the larger budgets last year."

The president of a large company that is putting heavy emphasis on cost reduction commented, "We have not reduced our research and development expenses because we realize that in this field we are mortgaging the future if we do not continue our efforts to develop new and better products."

Other measures cited include improvement of product quality, mergers with other companies, improvement of customer service, reduction of inventory, strengthening of key personnel, and training, including management development and sales training. One company is instituting a management incentive plan for all salaried employees and a restricted stock option plan for key executives.

One is trying out a new package and a new label. One is launching a company-wide executive program of consultation and meetings to produce profit improvement ideas.

Fifteen presidents offered some variation on the "working harder and smarter" idea. Only three mentioned cutting prices or "holding the price line" despite increasing costs.

Briquettes from R-N process for direct reduction of iron ore are smooth and clean, analyze up to 97 per cent iron



Natural gas reduces iron ore directly

Two companies with widely different backgrounds can work together to solve problems that neither can handle advantageously alone. This is the story behind the R-N process—today's success story on the direct reduction of iron ore.

The process is a joint development of the Republic Steel Corp. and the National Lead Co. Work on the process has extended over the past 13 years. It was initiated by the National Lead Co. to recover titanium values from titaniferous iron ores. Much early work was done in Norway.

When it appeared that the process might have value for beneficiation of iron ores, National Lead joined forces with Republic Steel to make the investigation. After extensive laboratory

studies, a pilot plant was constructed in Birmingham, Ala., which has now treated over 100,000 tons of iron ores. Details of the process and results of steelmaking tests on the products were given at the national convention of the American Institute of Mining, Metallurgical, and Petroleum Engineers in New York last February.

Speaking for National Lead Co. were Alex Stewart and H. K. Work (New York University, consultant for National Lead Co.). E. C. Smith, chief metallurgist and director of research, and D. E. Babcock, metallurgical engineer, presented the Republic Steel story.

The R-N process involves the direct reduction of iron ores in a controlled atmosphere and under controlled temperatures. This is done in a rotary kiln, below the melting point of iron and below the melting point of practically all

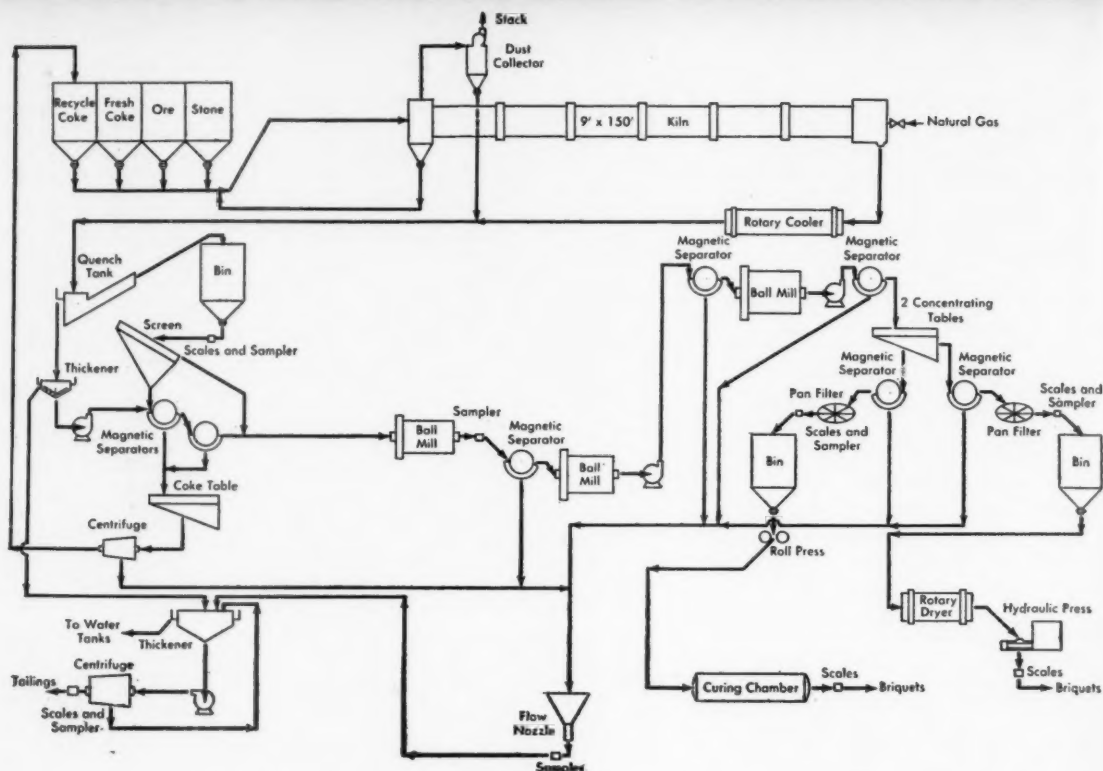
the constituents of the charge, using nonmetallurgical solid carbon fuels.

The process gives products which are suitable as feed for blast furnaces, cupolas, openhearth and electric furnaces. Depending on the mineralization of the ore, concentrates in the range of 95 per cent total iron (90 per cent or better metallic iron) and less than 2 to 3 per cent silica can be produced, with over-all iron recovery of 85 to 90 per cent.

With some low-grade iron ores, the process gives two products; 60 to 80 per cent of the over-all product contains 90 to 95 per cent total iron (about 90 per cent metallic iron) and less than 3 per cent silica. The remaining 20 to 40 per cent of the over-all product may contain 80 to 90 per cent total iron (60 to 80 per cent metallic iron) and an average of 8 per cent silica.

The richer grade of product (95 per

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Shown is flow diagram of R-N pilot plant at Republic Steel Spaulding Mine on Red Mountain outside Birmingham, Ala.

cent total iron, less than 3 per cent silica) is a suitable feed for the electric or openhearth furnaces. The remainder (90 per cent total iron and about 8 per cent silica) is particularly good for the blast furnace.

The R-N process is in the well-developed pilot plant stage. In processing U. S. Southern Clinton ore, the pilot plant, shown schematically at top of page, treats about 175 tons of ore per day. On the basis of this operation, full-sized plants have been designed and the process is now ready for commercial development.

In the process, crushed and sized ore (or balled fines, depending on the character of the ore) in a size range of up to 1 inch is fed to a rotary kiln. Along with the ore, an excess of carbonaceous fuel is fed into the kiln in an amount several times the carbon requirement, resulting in recycling 75 per cent of the carbon for reuse. (The solid fuel may be coke breeze, char, Disco, culm, anthracite fines and the like.)

This provides for controlled combustion with an efficiency of 75 to 80 per cent of the stoichiometric carbon requirement. Limestone and dolomitic limestone (depending upon requirements) are fed into the kiln to arrest the sulphur in the ore and in the solid

carbonaceous fuel.

The kiln may be fired with gas or oil and is equipped with air tubes with inlets spaced along the length of the kiln for control of the temperature and to control the composition of the atmosphere. As the ore travels through the kiln countercurrent to the flow of heat, it is dried, preheated and reduced. Of particular importance is the fact that reduction is always conducted at a temperature below the melting point of iron and below that of substantially all of the other constituents in the charge.

The kiln temperature used for U. S. Southern Clinton ore is in the range of 1800 to 2000° F. The average residence time required in the optimum operating temperature zone is in the order of 3 to 5 hours at an average feed rate of 7 tons per hour.

The product from the kiln is cooled, either slowly or rapidly as requirements dictate. This maintains the iron in a passive condition to corrosion.

The kiln discharge materials are separated by screening and by gravity and magnetic means. The excess solid carbon fuel is cleaned, dewatered and returned to the kiln. The magnetic portion containing the reduced or metallized iron is freed of gangue by grinding, magnetic and gravity separation procedures.

The beneficiation step has several unusual features: The product from the kiln is not a magnetic oxide, which is often removed from ores by magnetic separators. It is largely metallic iron. This means it has magnetic and gravity characteristics which allow it to be readily separated from its gangue. Furthermore, a combination of magnetic and gravity separation provides an optimum degree of over-all recovery. This is one of the factors contributing to the excellent recoveries of iron and to the quality of the concentrate.

It was decided to produce sufficient quantity of the high-grade R-N product and make electric furnace steel to see how it would compare with scrap. This was produced from a high-grade Adirondack ore which gave a single product which analyzed over 95 per cent iron. The tests were made at the Republic plant in Chicago, which has 95-ton electric furnaces and personnel with skill in tonnage carbon steelmaking. The test was simply scrap replacement with no quality problems involved. The instructions to the shop, says Republic's E. C. Smith, were "to examine the melting characteristics of R-N briquettes as straight replacement for scrap in the electric iron process."

A total of 2064 tons of briquettes

were shipped from the pilot plant to Chicago. Between Feb. 18 and April 14, 1957, 58 heats with varying percentage of R-N briquettes were compared with 58 companion heats using scrap to determine differences in melting performance as the percentage of R-N briquettes in the charge was increased. These heats were made in pairs—an R-N heat was followed by a companion scrap heat for comparison.

The analysis of the briquettes used in the Chicago tests was:

	Per Cent
Iron	95.20
Metallization	92.41
Carbon	0.28
Manganese	0.07
Phosphorus	0.029
Sulphur	0.019
Silica	0.51
Titanium oxide	0.57
Alumina	0.34
Lime	0.17
Magnesia	0.17

The total slag-forming materials in this analysis are about 2.75 per cent.

The cylindrical briquettes had a mean diameter of about 4 inches; thickness varied from 3 to 4 inches. They weighed from 6 to 8 pounds each and gave a bulk density of 225 pounds per cubic foot in the charging box. These physical properties approached the density of heavy bloom butt scrap as charged to the furnace. The briquettes were shipped without special handling or preparation.

Some observations which were made during the tests follow: The R-N briquette has a real advantage for the melter, and this was quickly recognized in the gentle boil on melt-in which insured even bath temperature and action—so useful in fast-working furnaces.

Requests for comments brought out the fact that there was only one real criticism. The 225 pound per cubic foot bulk density, as charged, tended to place an upper limit on their use at less than half the weight of the total charge. This objection can be eliminated by modify-

ing the shape of the briquette.

However, the good strength characteristics of the briquettes permit easy handling and storage. Loading for charging either into buckets or boxes is fast. The potential speed-up of operations pleased the melt shop crews.

The uniformity of product both in density and electrical conductivity made for surer operation because no nonconducting spots were encountered. This is important where very heavy power input for melt-down is used. The risk of power interruption and broken electrodes is nearly eliminated.

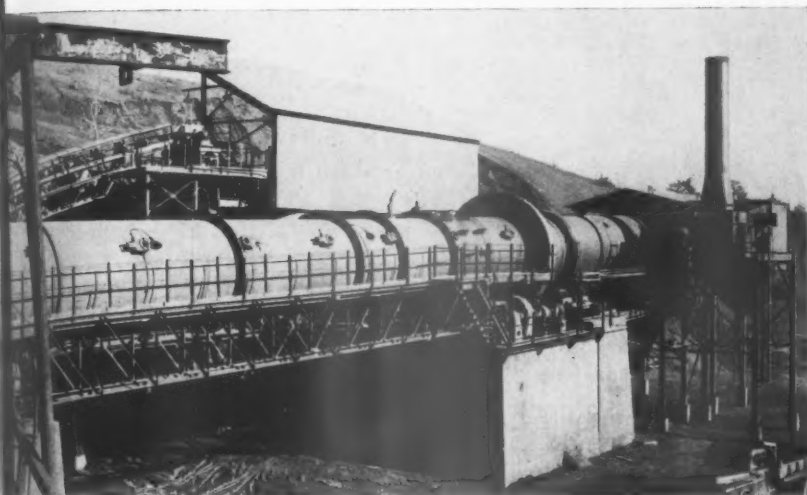
Where the composition of the material is known to be free from harmful incidental alloying elements, the melter need not wait for special laboratory analyses.

He can proceed with much more speed toward the completion of each phase of the operation. Freedom from dirt and contamination gives smaller slag volumes which are a problem even when molten pig iron is used, due to such slag-forming elements as silicon and phosphorus.

In comparing R-N heats with scrap heats, no significant differences were found in operational factors, such as operating delays, charge to tap time and patching time. Generally the power input and yields were essentially the same as for scrap heats. Further studies are planned to pin down some of the fine points on these two factors.

It is wrong, however, to look at high-grade R-N concentrates as being just a competitor of scrap. National Lead people say that, where a new installation is being considered, there is every indication that the combination of an R-N plant with electric furnaces would be cheaper to operate and would involve less investment cost than a blast furnace-openhearth system.

(Continued on page 40)



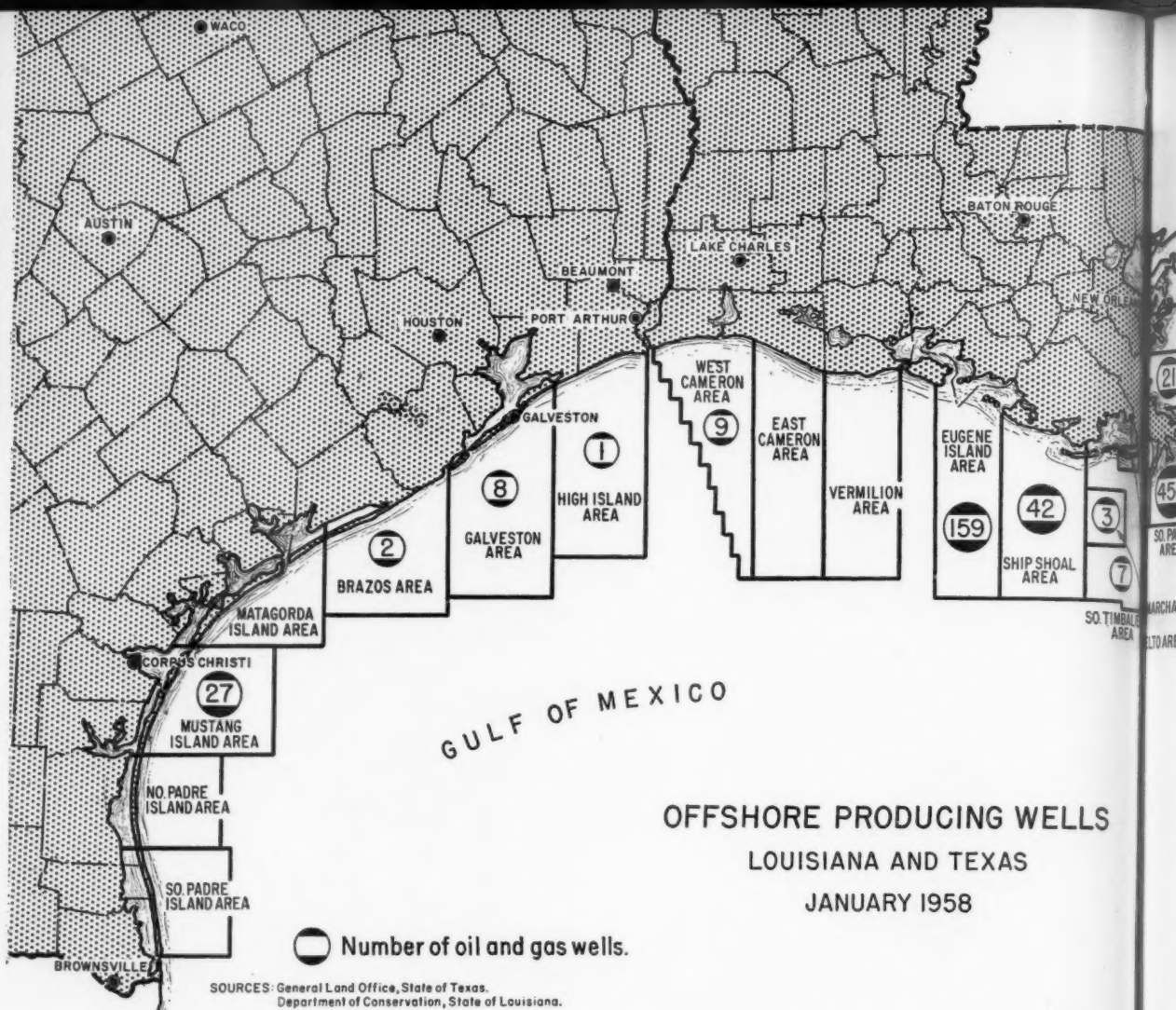
Ore, coke, and limestone are fed into this nine-foot diameter rotary kiln for the pilot plant. As the ore travels through kiln, it is dried, preheated, and reduced

Why there is interest in direct reduction of iron ores

1. High-grade open pit ore reserves within the U. S. are rapidly being depleted.
2. Metallurgical coking coals for the blast furnace are becoming less available and more expensive. This spurs the need for higher grade iron feed stocks which require less coke. Chars (low-grade noncoking coal) can be used in direct reduction processes.
3. Capital investment for blast furnaces becomes more precarious unless high-grade feed can be developed on a

competitive basis with present feed stocks.

4. Direct reduction to produce metallics, followed by electric furnace processing, requires the lowest capital investment for new steelmaking capacity.
5. In U. S. low-grade reserves, the ratio of nonmagnetic to magnetic ores is about 10 to 1. This is the basic reason for developing an economic direct reduction process.
6. Scrap does not offer a uniform composition for steelmaking at uniform cost.



The Gulf gives up its treasure

By **JAMES E. JENSEN**

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One of the principal unexplored frontiers in the Southwest—as colorful and dangerous, but potentially reward-

(Reprinted with permission from "Business Review," a publication of the Federal Reserve Bank of Dallas, Texas.)

ing, as the frontiers of the past—is the Gulf of Mexico, especially the energy resources which lie beneath the floor of the gulf.

Under water less than 120 feet deep is a vast area with virtually untapped reserves of oil and gas. Over this area, an armada of ships and men is steadily probing for the unseen treasure. The costs of this search are enormous, but the return is already more valuable than the pirates' gold carried over these waters for many years.

The submerged continental shelf of Louisiana and Texas is one of the largest known sources of petroleum remaining in the nation. Encompassing an area larger than New Hampshire, Vermont, and Massachusetts within the 120-foot limit, the shelf extends 50 miles into the ocean at the Rio Grande and 140 miles off southwest Louisiana and then narrows to 12 miles at the southern point of the Mississippi River Delta.

The principal producing strata in the offshore area are a continuation of the

Offshore drilling in the continental shelf, under water less than 120 feet deep, has provided an area rich in untapped oil and gas reserves



location of operations, adverse weather, and other natural difficulties, such as corrosion. The engineering solutions to these problems have been imaginative and highly successful. For example, the difficulty in moving drilling equipment over water has led to the development of the whipstock for directional drilling (drilling at a slant), since the derrick on a fixed offshore platform cannot be moved for offset wells, as is done on land.

Transporting equipment and men to offshore platforms is expensive and often requires novel techniques. Drilling crews must be rotated regularly, often on a 10-day-on and 5-day-off basis. The use of helicopters for shore-to-platform transportation is increasing and has proved to be an effective safeguard in evacuating personnel when storms or hurricanes threaten in the gulf.

Three major types of structures are used in offshore drilling—namely, the mobile platform, the small fixed platform served by a floating tender, and the permanent drilling platform. A fourth type—the floating drilling barge—has just appeared on the scene and, following further development, should become more common.

The mobile unit is the most popular structure for exploratory drilling, being used currently for approximately 85 per cent of wildcat wells. The small fixed platforms with floating tenders are used for the remainder of exploratory drilling and for approximately one-half of development drilling, while the permanent platforms account for the other half.

Although mobile units are of diverse design, the basic characteristic of all of them is the ability to be moved easily over water to new drilling locations, where the supports are lowered to the floor. The base support may be a floating hull, which is sunk to the bottom, or legs that are driven into the floor of the gulf.

In the tender-platform method, the floating tender houses personnel and

supplies and, in most cases, contains the drilling mud system and power unit, while the derrick itself is set on a small fixed platform. In contrast, the self-contained permanent platform is large enough to house personnel, besides providing space for supplies, the drilling rig, and auxiliary machinery.

Each of the major types of structures has its advantages, disadvantages, and specialized functions. Since the mobile platform can be moved economically and quickly over water, the greatest advantage of this structure is that a single unit can drill any number of wells. The cost of the vertical wells drilled by the mobile units is only half that of the directional wells brought in by the other types of structures.

The major disadvantage of the mobile platform is the high capital outlay required, mounting to millions of dollars for each unit. The mobile platforms are also more vulnerable to adverse weather than the other structures and, compared with the self-contained platforms, appear to be potentially limited to shallower water.

The advantage of the small fixed platform is the low initial cost of the structure, which can easily be expanded into a self-contained unit. Up to six wells can be drilled directionally, and the rig can be skidded a few feet on the platform to permit the drilling of three to five additional wells. Although the difficulty involved in deep-water anchorage of tenders is approximately equal to the engineering problems in designing mobiles for greater depth, expansion plans of oil companies are reflecting a growing preference for the small platform method in exploratory drilling.

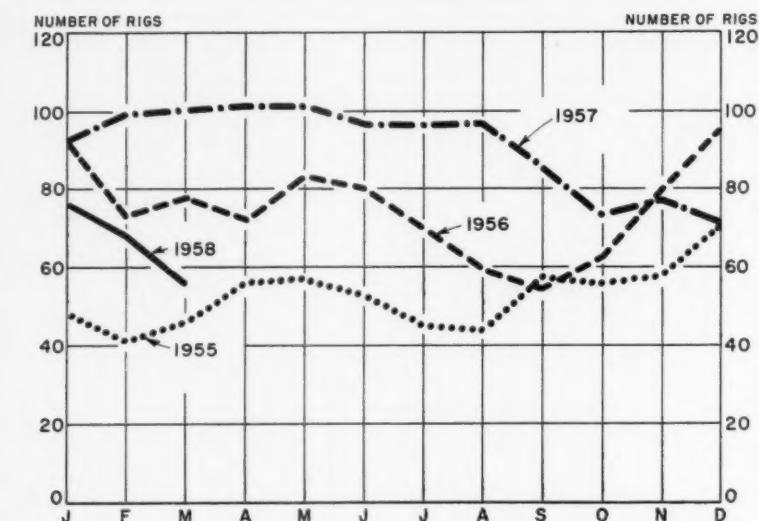
The self-contained platform—the third type of structure—has the lowest operational costs of any offshore structure and allows the economy of multiple drilling, with as many as 12 wells being drilled from one platform. Compared with other structures, the large fixed platform can be designed for the greatest depth—an

prolific onshore Miocene trend, which dips gently but thickens appreciably seaward. Offshore wells drilled to depths of over 15,000 feet have failed to penetrate the complete section, which is estimated to have a maximum thickness of 25,000 to 30,000 feet. Uplifts caused by salt domes in this Miocene section form the structural traps for the major oil and gas fields found in the area.

Offshore drilling is a hazardous, expensive operation with problems evident in every aspect, including the isolated

OFFSHORE DRILLING RIGS IN OPERATION

LOUISIANA AND TEXAS



SOURCES: World Oil.
Hughes Tool Company.

advantage that will increase as drilling is extended farther into the gulf.

Even if other problems are met, drilling in the offshore areas is still subject to legal restrictions. In June 1950, the United States Supreme Court ruled that the state claims of ownership in the Tidelands area were invalid. Except for seismographic work, operations in the gulf were subsequently paralyzed until Congress took action in 1953. In the Submerged Lands Act of May 1953, Congress grants to the states the submerged lands limited by the boundaries existing when each state became a member of the Union.

Passage of this act led to a sharp acceleration in activity, but in 1956, oil operations in the gulf were again greatly diminished by the conflict of border claims between Louisiana and the United States. The United States Government claims that the state boundary extends only three miles into the gulf; moreover, there is a dispute as to the exact location of the shore line. After four months of inactivity in the extensive disputed area, an interim agreement was signed by representatives of the State of Louisiana and the United States Government, and operations were quickly resumed.

The first oil discovery in the Gulf of Mexico occurred in January 1938 with the completion of a well in the Creole field in nine feet of water and one mile off the coast of Louisiana. Following this discovery, exploratory activity increased, but no further success was achieved until November 1947, when an oil well was brought in 11 miles off the coast of Terrebonne Parish, La. This well may be regarded as the first true offshore oil well, since it is located beyond the sight of land.

Because of the legal problems, offshore drilling was relatively slow until 1953; more than 80 per cent of the total offshore investment has been made since then. There have been about 2,000 wells drilled in the offshore area thus far, 1,159 of which were drilled in 1956 and 1957. Offshore well completions in 1956 were approximately one-fifth more than in 1955 and totaled 479, of which 446 were drilled in the Louisiana area and 33 off Texas. Drilling during 1957 showed a 42 per cent increase over 1956. Of the 680 wells completed, 648 were off the Louisiana coast and 32 were in the Texas zone.

Although offshore drilling slackened in late 1957, the cumulative gain in completions was still impressive in view

of the 7 per cent national decline during the year. The slower pace continued during the first quarter of 1958, when the number of rigs operating in the gulf was only three-fifths as large as a year earlier.

The wildcat success ratio achieved thus far—over one-third—is sharply above the 11 per cent rate on land. However, the degree of success varies widely between the offshore areas. In the Louisiana region, the ratio of successful wildcats in 1956 and 1957 was 52 per cent and 45 per cent, respectively. However, the cumulative results off the coast of Texas have been less satisfactory, since only 18 per cent of the wildcat wells have produced. Nevertheless, 4 per cent of the total offshore wildcats have struck fields capable of producing 25 million barrels or more; nationally, less than 1 in 400 wildcat wells results in a field that large. Consequently, the hydrocarbons found per well drilled in the gulf are estimated to be nine times greater; therefore, the costs in terms of proved reserves approximate those on land.

The magnitude of the potential and proved reserves found offshore is uncertain. In general, there has not been enough development drilling to evaluate the fields already discovered and thereby furnish reliable estimates of proved reserves. At the present time, the estimate of 13 billion barrels in potential crude oil reserves—10 billion barrels off the Louisiana coast and 3 billion barrels in the Texas area—is widely accepted, and the consensus for ultimate gas reserves is 14 trillion cubic feet.

Offshore crude oil production in 1956, averaging about 113,000 barrels daily, almost doubled the 1955 flow. Reflecting more extensive pipeline connections and new wells, gas production increased sharply in 1956 to total 137 billion cubic feet, or virtually double the 1954 level.

The Suez Canal closure caused a rise in offshore crude oil production to approximately 170,000 barrels per day in March 1957, representing a sharp gain from the 60,000 barrel-per-day average in mid-1955. Subsequently, the flow declined to average 144,000 barrels daily in 1957. Offshore output accounted for about one-sixth of Louisiana's total production in that year, compared with 13 per cent in 1956. Crude oil production in the Texas area during 1957 was much less impressive, with a daily average of somewhat below 1,000 barrels.

Natural gas production from the sub-

merged areas averaged about 397 million cubic feet per day in 1957, with 2.5 million cubic feet coming from areas off the Texas coast and the remainder from the Louisiana area. This output is approximately 1 per cent of the national total, whereas crude oil production from the offshore areas is about 2 per cent of national production.

As in drilling, there are a number of major problems for offshore producers. Adverse weather directly affects costs of offshore production, causing delays, shutdowns, unusual equipment specifications, and expensive preparations for approaching storms. The offshore area experienced especially bad weather, including Hurricane Audrey, in 1957; and three fixed platforms, seven mobiles, and two tenders suffered losses and damages. Unsupervised automatic production of crude oil is being given increasing attention, and storm chokes, which shut in wells during adverse conditions, are standard equipment in the offshore area.

The use of barges is the most prevalent method of transporting crude oil. The advantage of barges as compared with pipelines is the lower capital expenditure required; however, as a result of high operational costs, the expense of barging oil is three to five times greater than for pipeline transportation.

The best method for transporting crude oil—and the only solution for marketing natural gas—from the offshore area is by pipeline. Pipeline transportation permits volume production, is not interrupted by adverse weather, and has the lowest operational costs. However, the great obstacle to the use of pipelines is the large capital outlay needed for construction. Besides the expense, building pipelines under water is an intricate technical operation easily affected by unfavorable weather and requiring specially designed equipment.

On the whole, pipeline facilities are inadequate and, for the most part, are only available for wells drilled close to shore. Consequently, almost one-fifth of the offshore oil wells and three-fourths of the gas wells are capped for lack of pipeline facilities. The pipeline problem was eased somewhat in 1955 by the construction of a 50-mile underwater system leading to a number of deep-water wells and having a daily capacity of 30,000 barrels of crude oil.

Increased connections for gas wells came with the completion of a new pipeline off Louisiana late last year. The first

natural gas gathering system off the coast of Texas, in the Padre Island area, went into operation in November 1957.

Because of the isolated locations of well sites, effective communications are urgently required to coordinate production and to operate pipelines. In addition to serving ordinary supervisory and personnel needs, a communications network is an important factor in employee safety.

The most prevalent method of communications is radio (the very high frequency or frequency modulation types), but as a result of increasing activity offshore, the radio channels have become very crowded. One major offshore operator has solved the problem by installing microwave radio, which insures complete privacy with a high order of dependability.

Although transportation and weather difficulties do exist, the major offshore problem currently is economic. The cost of drilling and equipping a well in the gulf is about eight times greater than the national average. Not only must the well be much deeper, but the cost per foot drilled is three times that on land. The offshore rig must be larger and more powerful and, consequently, requires five times as much steel.

The rentals for drilling units vary from \$3,000 a day for a platform rig to \$8,000 per day for a mobile unit, while the capital expenditure required to purchase a mobile platform ranges from \$2 million to \$7 million. Moreover, the prices paid for leases have increased many-fold in the last decade. Louisiana sold its first leases in 1945 at \$5 an acre. The average bonus in the Louisiana area was about \$200 in 1957, although some leases have been priced in excess of \$2,000 an acre.

Offshore operations require a great financial outlay for little immediate receipts. The approximately 50 companies that operate offshore have invested over \$2 billion in the gulf and, thus far, have received only about \$400 million in gross income. At the present time, gross receipts equal only one-half of current expenses. Some operators estimate that income will be below operating expenses for the next five or seven years, and after that period, capital expenditures would have to be recouped.

Of all participants, the federal and state governments have had the greatest financial success. Total receipts of the government jurisdictions in the gulf are \$577 million. Besides the bonus, or price

of the lease, which is determined by bidding, operators must pay a rental on leases at the end of each year if no drilling or production is being carried on.

For leases under Louisiana's control, the rental is one-half the bonus payment per acre. The rental in Texas has varied from 25 cents to \$5 per acre, while on Federal leases it is \$3 per acre. Moreover, there is a royalty equal to one-eighth of all production in the Louisiana area; the royalty is one-eighth to one-sixth in the Texas region and is one-sixth on Federal leases.

Although it has been leasing only since August 1953 (the effective date of the Outer Continental Shelf Lands Act), the United States Government has received \$309 million, which is over half the total receipts of the government jurisdictions. From bonuses, the federal government has received \$248 million, and rentals and royalties total \$27 million and \$33 million, respectively; shut-in gas payments are about \$1 million.

Louisiana has received \$142 million in bonuses since the State's first sale of leases in 1945. With rentals of \$28 million and royalties of \$35 million, Louisiana's cumulative receipts total \$205 million. Texas has the longest history in the sale of leases—its first lease was sold in 1922—but has received the smallest revenue of all the government jurisdictions, reflecting the lagging activity in the Texas area.

The initial discovery off the Texas coast, an oil well near Corpus Christi, was not made until 1954. Total receipts are \$63 million, of which bonuses total \$58 million. Rentals have yielded \$4 million, and the remainder of the Texas revenue has come from royalties and fees for exploration permits.

As a consequence of the mammoth capital expenditures required, most offshore activity has been conducted by the large oil companies. Another result has been the use of intercorporate organizations. A substantial share of the leasing has been made by groups of corporations.

With investment expenditures in the billions of dollars and crude oil production equal to one-sixth of Louisiana's total, offshore development has had a definite economic impact on the adjacent area. New office buildings of major oil companies in the locale, barracks, communications centers, shops, helicopter bases, storage tanks, and terminals have been built to handle the offshore busi-

East Ohio headquarters



The East Ohio Gas Co., anticipating a 50 per cent increase in gas sales within the next 10 years, will occupy the first eight floors of this building—the newest skyscraper in Cleveland

ness. The economic tempo of coastal villages has been quickened by the servicing of off-shore rigs. As evidence of the effect on employment, during the boundary conflict in 1956, one-half of the offshore rigs and 30,000 men were idled.

The demand for the several types of marine craft needed to serve each rig has been a factor in stimulating manufacturing. A major steel company estimates miscellaneous vessel requirements—other than mobile drilling units and tenders—at 11,400 tons annually. The smaller gulf shipyards concentrate on building the special craft required for offshore crewmen, while the larger yards construct tenders and barges, mobile drilling rigs, and the great prefabricated platforms.

The typical offshore well requires more than five times the volume of tubular goods needed for the average onshore well. A major reason is the greater depth of the wells, and because of the

telescoped casing, required tonnage increases at geometric rates.

Also, it is common practice among operators to use large-diameter casing to avoid bottom-hole problems and to allow for multiple completions. Moreover, as a result of needed stand-by equipment, safety precautions, and marine equipment for tenders, one-third more nontubular steel is needed per well than onshore. Total offshore steel requirements are estimated at about 350,000 tons annually.

The development of the submerged area will be inhibited by the same factors which have recently created problems for the domestic petroleum industry generally—namely, the oversupply situation and the competition of imports and foreign exploration. The expectation is that production allowables will continue at reduced levels, and there might be declines in the extra allowables permitted offshore wells.

In addition, certain other problems may become important to the offshore developments. For example, the high success ratio will probably diminish after the choicest locations have been explored and developed, although the ratio is likely to remain above that on land. The depth of wells, now averaging 9,500 feet (or $2\frac{1}{3}$ times deeper than onshore), is expected to become even deeper; and drilling will move into greater depths of water. Consequently, costs will increase, equipment will require further adaptation, and new methods—such as underwater completions—will have to be promoted.

The gain in production is expected to be greater than the substantial rise in drilling, since wells that have been shut in will be brought into use as transmission and gathering lines are extended. Besides, the reserves are so large relative to current output that substantial in-

creases in production are not closely tied to further discoveries.

The brightest economic factor appears to be the prospect for accelerated sales of natural gas. Although gas has only been responsible for about 10 per cent of offshore revenue, receipts from this urgently demanded product promise to increase sharply. In 1957, total offshore gas production showed a marked gain over the prior year, while output off Texas rose to almost seven times the 1956 rate. Since natural gas sales are negotiated by large-scale contracts, gas production will probably expand faster than crude oil output.

The submerged area has greatly improved Louisiana's status as a petroleum state. Offshore discoveries are largely responsible for the state's addition of 420 million barrels of proved oil reserves in 1956 and the gain of 182 million barrels in 1957.

The Texas submerged area poses special problems, as its performance has been disappointing thus far. Not only is the success ratio below that in the Louisiana region, but the fields discovered and reserves proved have been much smaller.

Therefore, drilling and production have been at low levels. Operators often attribute this unfortunate experience to the prevailing Miocene sands, which have not performed well onshore in Texas. Off Louisiana, thick rich sands alternate with shale; but in the Texas submerged area, the formations are massive sand sections with no shale layers or are sands only a few hundred feet thick alternating with broad shale layers that get even thicker seaward.

Faults appear to be characteristic, in contrast to the prolific salt domes of the Louisiana region. Consequently, the structural pattern appears to be the major cause of the lag in Texas discoveries.

Iron ore

(Continued from page 35)

In the blast furnace, the use of R-N product decreases coke consumption and increases output because most of the iron is already reduced. The blast furnace is a relatively inexpensive way to melt the iron and to complete the refining operation.

During carefully controlled runs, 6000 tons of R-N briquettes were

charged in a Republic Steel blast furnace. The briquettes were considered as a new added component—not as a replacement material for any specific ore.

In one test period, 7 per cent of the burden by weight was in the form of R-N briquettes. However, because of the higher iron content, this 7 per cent actually represented about 13 per cent of the total iron units charged to the furnace. Substantial coke savings were realized compared with charging an equiv-

alent quantity of ore. Calculations showed the savings to be about 0.49 ton of coke per ton of briquettes used. The iron production was increased about 10 tons per day, per 1 per cent of briquette added.

An additional economic benefit from the use of R-N briquettes is the lower phosphorus content of the pig iron produced. This is particularly important because of the high-phosphorus ores in the south.

A. G. A. Convention

(Continued from page 5)

Speakers for Tuesday's luncheon meeting, yet to be announced, will cover these topics: "Employee Training—Here To Stay," "Rate Determination Factors," and "Need for Long Range Forecasts," the last of which will place special emphasis on the customer activities operation.

The Order of Accounting Merit will be presented during the luncheon meeting. The chairman's report will be made by Section Chairman D. W. Peterson, of the Minneapolis Gas Co., and the report of the Nominating Committee will be given by W. D. Sweetman, The Peoples Gas Light and Coke Co., followed by the election of Section officers.

T. W. Bradshaw, vice-president, Atlantic Refining Co., will be the guest speaker at the General Management Section's luncheon meeting to be held at the Borton Hall in the Hotel Dennis on Tuesday, Oct. 14.

He will discuss the modern concepts of management and company organization with the aim of aiding his listeners to make a critical evaluation of their company's program. Mr. Bradshaw is an interesting and forceful speaker with a wide knowledge of precepts and practices of modern management.

President Otto will present the A. G. A. Public Relations Achievement Awards and the A. G. A. Safety Achievement Awards during the meeting. Business to be transacted includes the election of Section officers for the 1959 Association year.

John H. Wimberly, president, Houston Natural Gas Corp., will preside as Section chairman. Delegates planning to attend the luncheon meeting are advised that the session will extend beyond the luncheon period.

The Industrial and Commercial Gas Section will meet Monday afternoon, Oct. 13, in the Hotel Traymore. Robert Willis, assistant to the president, Stone & Webster Corp., will speak on the advisability of establishing summer rate structures designed to increase the sales of gas air conditioning and to attract other favorable industrial business. Several companies already have established gas air conditioning rates and an even greater number is considering the practicality of doing so.

F. Alexander Magoun, a personnel consultant, will consider the various factors involved in both management development and self-development personnel programs.

A perennial subject on the Industrial and Commercial Gas Section program has been "New Equipment and Markets." With the constant annual change in new product development in the industrial and commercial field, it has been found to be to the advantage of the Section's members to be regularly informed of the new sales and market opportunities constantly created. Therefore, once again this subject will be treated by an industrial expert and a commercial expert. Roy E. Wright, NEGEA Service Corp., and Section chairman, will preside. Section officers will be elected during the meeting.

The Operating Section will meet Monday and Tuesday afternoons in Trimble Hall, Hotel Claridge. The program is still in the preparation stage; however, 14 suggestions for topics have been made and the committee is now in the process of selecting those considered most suitable for the meeting.

The Section will have an exhibit outside the Convention Hall ballroom to give delegates the latest information on standard purchase specifications for small gas meters of the diaphragm type. Gas meters of this type will be on display.

Three awards will be presented during the Section meetings: The Operating Section Award of Merit, the Distribution Achievement Award, and the Beal Medal. V. F. Bittner, The Peoples Gas Light and Coke Co., Chicago, will preside as Section chairman. Section officers will be elected during the meeting.

The Residential Gas Section will meet in the American Room, Hotel Traymore, beginning at 2 p.m. Tuesday. A. G. Bur, vice-president, sales, Wisconsin Public Service Corp., will preside as Section chairman.

The program will include the election of Section officers, the presentation of the A. G. A. Home Service Achievement Award, and the presentation of Julia Meade and the newly-crowned Mrs. America, Mrs. Helen Giesse of Cleveland.

F. A. Kaiser, vice-president and general sales manager, Michigan Consolidated Gas Co., will deliver an address entitled "The Time Is Now." A second address will be given by a yet to be announced speaker on "Salesmen Have to Be Salesmen."

S. F. Wikstrom named director of gas industry's PAR Plan

S. F. WIKSTROM, director of promotion and advertising for the American Gas Association since 1955, has been named director of the Association's PAR Plan (Promotion, Advertising and Research). His appointment, effective Aug. 1, is one of five PAR staff promotions announced by C. S. Stackpole, A. G. A. managing director.

As director of the gas industry's \$6 million-

a-year PAR Plan, Mr. Wikstrom will succeed Allen D. Schrodt, who has resigned to relocate in the Southwest. A major PAR activity is the \$3 million-a-year national television sponsorship of "Playhouse 90."

Norval D. Jennings, A. G. A.'s advertising manager since 1953, will succeed Mr. Wikstrom as promotion and advertising director. Mr. Jennings' former post will be filled by

Charles R. Bowen, promotion manager for the past three years.

A. G. A. also has advanced two other members of the PAR staff. Kenneth F. Muldoon, manager of the Association's New Freedom Gas Home Bureau since 1955, has been appointed promotion manager. He is succeeded by Gerald P. Mullins, formerly assistant to the director of promotion and advertising.

Textile symposium to be held in Greensboro, N. C.

A LONG step forward will be taken for the textile industry when the 2nd Annual Symposium convenes in Greensboro, N. C., at Sedgefield Inn, on Sept. 8 and 9. Sponsored by A. G. A. and Southeastern Gas

Association, it will provide a means for the meeting of minds on textile processing operations in the area where heat is required. The problems faced by producers of fabrics, textile finishers, textile machinery manufac-

turers, manufacturers of gas equipment suitable for textile applications, and the gas industry will be discussed. An invitation is extended to interested textile personnel to attend this two-day symposium.

The first showing in a model home of new all-on-top O'Keefe and Merritt built-in top burner unit was feature of "Sayonara" home



Unusual design of the "Sayonara" home at Orange County Home Show is shown above in photo taken from the central court looking into the all-gas kitchen

Bath is sunken (at left) to same level as outdoor central court pool. Laundry area, with combination washer gas dryer at right



*Southern Counties Gas Co. officials
help promote the "Sayonara"; house is ideal
as residence or as summer retreat*

All-gas home modeled after Japanese design

The outstanding attraction at the recent Orange County Home Show in Costa Mesa, Calif., was a resort-style home seen by more than 90,000 visitors.

The all-gas home was named "Sayonara" as part of a promotion which tied in with the popular motion picture of that name. Local movie houses ran trailers and distributed discount admissions to the Home Show.

Local and national press coverage of the home outdistanced anything previously achieved for the Orange County show. Los Angeles newspapers as well as local press covered the house extensively; it was featured on television, and is receiving national magazine coverage. The home was the product of nationally known architects, Smith and Williams, AIA, working in close association with builder George D. Buccola and with officials of Southern Counties Gas Co., which services the Orange County area.

The "Sayonara" home draws much of



All-gas kitchen won favorable comment with its built-in range, refrigerator and modern lines



Admiring kitchen (l. to r.): G. D. Buccola, builder; J. M. Kennedy, Southern Counties Gas Co.; and Japanese Consul Shigeru Nakamura

its basic idea from classic 17th century Japanese construction—now being rediscovered—and incorporates this with contemporary schools to achieve a result that is truly "Pacific" in over-all feeling.

Basically, the home consists of two identical rectangles, both adjacent to a central court. The ground level of the court is a large reflecting pool; wooden decks extend the living areas of the rooms out over the pool as well as beyond the outside exterior walls of the home. The house contains 1,000 square feet, but the decks nearly double the practical living area.

One rectangle of the home, for living and entertaining, consists of living room and all-gas kitchen. A deck extending from the living room over the pool has a hooded fireplace, providing a perfect setting for outdoor dining and entertaining.

The other rectangle houses bathroom and bedroom. Lavatory is fully enclosed,

but the sunken bathtub and washing-dressing room form one open area with the bedroom. A combination washer-gas clothes dryer is housed in the bathing area. Gone are the days, say the architects, when the laundry area adjoined the kitchen. This was a harking-back to the time when servants were plentiful. Now the logical place for care of laundry is near the bedroom or bath where most dirty clothes accumulate, and clean ones are stored.

The "Sayonara" home is entirely "dry" in its construction, with the exception of tile in the kitchen and bathroom and the pool materials. Douglas fir is used in the decks and in much of the upright construction. Translucent glass for the exterior walls gives control of light and vistas, cutting light transmission without changing colors, and precluding the need for many draperies. Clear glass is used for the fixed and sliding walls around the central court. Use

of vaulted forms of perforated metal armor-weave over the court gives this open area the feeling of a lath-house.

The architects and builder figure that the home would be ideal not only as a residence for a couple, but for that rising group, the "two-house" family with a residence in town and one by the shore or in the mountains.

Preview ceremonies highlighted the home from every angle for Southern California press representatives and civic leaders. A Japanese-style barbecue with Japanese war brides acting as hostesses and an appearance by the Consul General of Japan further served to spotlight the unusual home.

The home was given away as prize in a drawing to a lucky ticket holder at the end of the home show. The strongly controversial tone of the house had the desired effect of arousing comment by most of the thousands who viewed the model.

Industry news

Name judges for PR contest

THREE outstanding leaders in the public relations and publications fields will serve as judges in A. G. A.'s second annual Public Relations Achievement Award competition. The evaluations will be made by Kenneth W. Haagensen, president of the Public Relations Society of America; James L. Macwithe, president of the American Public Relations Association; and Francis X. Welch, editor of *Public Utilities Fortnightly*. Trophies and certificates will be presented

during the A. G. A. Convention in October to member companies for outstanding contributions to greater understanding of the gas industry and modern gas service. The entry deadline was July 15, with all material and exhibits due August 15.

The first-place trophy was won last year by Southern California Gas Company for its "Facts About Natural Gas" program. Three companies earned merit awards and six others received honorable mention.

Portland utility changes name, acquires LP-Gas operations

PORTLAND Gas & Coke Co. has completed plans to change its name to Northwest Natural Gas Co. The new name became effective July 1. The company is extending its regional status by acquiring liquid petroleum gas operations at Eugene and Springfield, and at The Dalles, all in Oregon.

Subject to approval of the Oregon public utility commissioner, the first purchase will extend the company's Willamette valley system to communities 120 miles south of Portland and the second takes in an important mid-Columbia river port 85 miles east of Portland. Natural gas is the company's goal

for its new territories. El Paso Natural Gas Co. has agreed to construct a 125-mile pipeline reaching the Eugene area from a point along the Pacific Northwest Pipeline Corp.'s line across the Columbia river from Portland. El Paso also pledges to build a shorter lateral to serve The Dalles from the same line north of the Columbia. However, the plan to build the two laterals is conditioned on federal approval of the proposed merger of Pacific Northwest Pipeline Corp. into the El Paso system.

Portland Gas & Coke introduced natural gas to its 90,000 customers in its two-state

territory extending from Vancouver, Wash., south to Corvallis and Albany in the fall of 1956.

Its own Willamette valley line is being doubled in capacity in a four-year, \$1 million program, but it is not large enough to justify extension by the 45 additional miles needed to reach Eugene-Springfield, one of the region's largest wood processing centers.

The company has contracted to buy the Eugene-Springfield propane air system from Cascade Natural Gas Corp., and the butane system at The Dalles from The Dalles Natural Gas Co., owned by Melvin A. Davidson.

Complete automatic ignition for ranges mandatory in 1959

THE American Gas Association has announced that all gas ranges must be completely equipped with automatic ignition in order to qualify for the A. G. A. Seal of Approval after next Jan. 1.

The A. G. A. board of directors, meeting June 13 at Hot Springs, Va., voted to make automatic ignition for ovens and broilers mandatory at the beginning of 1959. Automatic ignition of top burners has previously been required for gas ranges bearing the approval seal.

Automatic ignition for commercial gas

cooking equipment has been in effect since Jan. 1, 1957.

The action taken by the A. G. A. board of directors ended speculation that the mandatory requirement might not go into effect next Jan. 1, as scheduled. Originally, the requirement was to become effective at the start of 1957, but a two-year postponement was then decreed.

Prior to the board's decision, an industry-wide survey revealed that gas utility companies representing 73 per cent of the industry's meters were opposed to postponing

the effective date beyond next January 1. Principal reasons for their position included the increased safety, improved modernity, strengthened competitive position, and greater convenience which completely automatic ignition will provide.

Automatic ignition for gas ranges has been available since 1938, but was not mandatory under the approval program except for top burners.

Approximately 23 per cent of all gas ranges sold last year were equipped with automatic ignition.

L. A. utilities propose to make free allowance of piping

REVISED RULES governing free extension of gas piping to new homes have been proposed in testimony before the Public Utilities Commission by representatives of Southern California Gas Co. and Southern Counties Gas Co.

Under the new rules the gas companies propose to make free allowance of piping, based on the number of gas appliances in a particular home. The more gas appliances are used, the more liberal the allowance the gas companies will make.

For example, a three-use customer will be extended a free allowance of 200 feet of main and 95 feet of service piping. More than 90 per cent of homes served by the two gas companies are three-use customers, witnesses pointed out. A two-use customer will have a free allowance of 130 feet of main and 30 feet of service piping.

The proposed allowances will be made equally for homes on the fringes of the two companies' systems, as well as to those at the center. Furthermore, there will be no

differentiation made between extension of piping to an individual home and to a tract.

In general, the proposed rules conform closely to principles established by PUC staff as part of the commission's current investigation to guide design of service extension rules of all utilities under its jurisdiction, gas as well as electric.

The proposed gas company rules are designed to encourage the maximum development of gas service into new territory, without becoming a burden on existing customers.

Arthur D. Little provides gas cleaning consulting services

THE consulting services of Arthur D. Little, Inc., Cambridge, Mass., are now available to the gas industry on gas stream cleaning problems. Arthur D. Little, Inc., is particularly qualified to undertake this responsibility through experience gained during the course of the research in gas stream borne particulates, which is sponsored by the Pipeline Research Committee.

The current particulate research is con-

cerned with the evaluation of commercially available gas cleaners. As a prerequisite to this evaluation, considerable work was done in the field of particulate detection, sampling and removal. Detection instruments were developed and made available. Sampling techniques were refined and reported in the recent PAR report, "Investigation of Sampling Procedure Requirements." Because of this valuable background, the Particulate Research

Supervising Committee feels that Arthur D. Little, Inc. will be of great value to the industry where a gas cleaning problem may be present.

A. G. A. Headquarters or Arthur D. Little, Inc. may be contacted for further information regarding this consulting service, the availability of the detection device, and the report on "Investigation of Sampling Procedure Requirements."

CGA holds annual meeting, elects Purdy, Tanner, McPherson



H. L. Purdy

DR. HENRY L. PURDY, executive vice-president of the British Columbia Electric Co., was elected president of the Canadian Gas Association, during that group's 51st annual meeting. Other new CGA officers are: first vice-president, N. E. Tanner, chairman of Trans-Canada Pipe Lines Ltd.; and second vice-president, R. C. McPherson, senior vice-president of Canadian Western Natural Gas Co. Ltd.

About 200 CGA members attended the meeting held June 24-27 at Murray Bay, Que. H. C. Darroch, president of Moffats Ltd., and outgoing president of CGA, presided.

Featured addresses were delivered by Col.

Maurice Forget, president of Quebec Natural Gas Corp.; Robert W. Otto, president of A. G. A.; E. D. Loughney, senior vice-president of British American Oil Co.; C. V. Coons, president of GAMA; John Fisher, executive director of the Canadian Tourist Association; Hon. Ellen Fairclough, Canadian Citizenship and Immigration Minister; and C. S. Stackpole, managing director of A. G. A.

Mr. Stackpole predicted a glowing future for Canada's natural gas industry, saying that in the near future sales and profits should increase at a now unheard of rate. He based his predictions upon similar experience in the U. S. "When you have a fuel which does a better job for less money, and when people are convinced of its modernity, you have an unbeatable combination of circumstances," he said. However, he warned industry officials not to set their sights too low as a result of over-conservative projections.

Mr. Otto discussed various aspects of the U. S. gas industry, particularly the record revenues reached in 1957. He added that despite the rosy picture which is portrayed of the industry, there are some very real problems to meet. "Our chief problem is, and will continue to be, the threat of our competition," he said, and called for greater unity as a countermeasure.

Mr. Coons presented an optimistic picture for the future of the gas appliance industry. He mentioned signs which point to greater sales—an imminent pick-up in new housing; an upward trend in bank deposits; and an abundant crop of teen-agers who will reach the marriageable age in about four or five years.

"The American gas industry," said Mr. Coons, "has resolved to continue to talk in positive and optimistic terms, and to make no contributions by thought, deed, or action to recessionary thinking."

Iowa-Illinois and Iowa Power study feasibility of combining

PLANS to consider combining Iowa-Illinois Gas and Electric Co. and Iowa Power and Light Co. of Des Moines into a single company have been announced by the respective presidents, Charles H. Whitmore and N. Bernard Gussett.

At the same time it was revealed that an exhaustive study to determine the feasibility and desirability of the project will be started immediately by Stone & Webster, engineering

consultants.

In connection with the announcement, Mr. Whitmore pointed out that any proposed consolidation would require the approval of stockholders of both companies as well as favorable action by regulatory authorities. In any event, he said, the combination could not be completed before the year-end.

Preliminary plans call for retaining the operating headquarters of the present Iowa-

Illinois organization in Davenport, with important staff functions of the combined operation also centered in the Quad-Cities, and general headquarters in Des Moines.

The two companies together serve about 270,000 electric customers and 206,000 gas customers.

The companies' electric systems are interconnected by existing electric transmission lines.

Piping Code Committee studies ASA B31 clarification

THE gas industry code committee for Section 8 of the American Standard Code for Pressure Piping, ASA B31, met April 16-18 to review and coordinate intra-group activities. More than 80 members and guests attended the three-day session at White Sulphur Springs, W. Va.

The members under the chairmanship of John H. Carson, vice-president, The East Ohio Gas Co., represent 16 gas distribution companies, 17 gas pipeline companies, 11 steel companies, 10 construction and consulting firms, 5 trade associations and 2 gas producing companies. Also represented are several universities, research organizations, federal and state bodies, and an underwriting board.

Formally known as Subcommittee 8 of ASA B31 Committee, the group has the task of keeping this American Standard in step with the latest technological developments pertaining to their section of the ASA B31 Code—gas transmission and distribution piping systems. The meeting was the third of the full membership since the publication of the present code. Other meetings of the subcommittee, in the form of subgroups and task groups, are also held regularly at which times considerable work is done in research and investigation.

The code is now widely accepted in the gas industry. Sponsored by the American Society of Mechanical Engineers as a section of their "Pressure Piping Code," Section 8 was approved and endorsed by the A. G. A.

board of directors in 1954.

Established policy for the subcommittee directs that the code be reviewed for the publication of another edition every three years. The changes under consideration were not extensive in nature but were solely for the purpose of clarifying various passages and for the editorial procedure of correcting and revising for more proper presentation.

During the last session, the entire subcommittee reconvened to consider further the results of the subgroups' deliberations. Reasonable concurrence was reached on a majority of items. Those requiring additional study were deferred to a letter ballot, a method always used by this body in reaching accord on subcommittee business between meetings.



John H. Carson (l.), chairman, Subcommittee 8, and vice-president, The East Ohio Gas Co., discusses the ASA pressure piping code with his vice-chairmen (l. to r.): Walter H. Davidson, Transcontinental Gas Pipe Line Corp.; John F. Eichelmann, El Paso Natural Gas Co.; and B. C. White, Warren Petroleum International Corp. The group met at White Sulphur Springs, W. Va.

Michigan Consolidated celebrates century of operation



At head table during Michigan Consolidated's 100th anniversary dinner are (l. to r.): Msgr. Warren Peak; Henry Tuttle, president; Mayor S. J. Eldersveld; Mrs. Michigan; Dr. Harlan Hatcher, University of Michigan president; F. A. Kaiser, vice-president and general sales manager; Jack D. Hogan, general district manager; Charles R. Henderson, retired general manager; Congressman George Meader; Joseph H. Detweiler, Chamber of Commerce president; Rev. Henry Kuizenga

THREE HUNDRED of Ann Arbor's most prominent citizens turned out the evening of April 24 to help Michigan Consolidated Gas Co. celebrate one hundred years of gas service in the city.

Dr. Harlan Hatcher, president of the University of Michigan, was the main speaker at the dinner party in the huge ballroom of the Michigan Union. He lauded the company for its many contributions to the welfare of the community and paid special tribute to the many fine civic deeds performed by company personnel through the years.

Other speakers included Mayor Samuel J. Eldersveld, Congressman George Meader and Joseph H. Detweiler, president of the Ann Arbor Chamber of Commerce. Henry Tuttle, president of Michigan Consolidated, praised the four managers who served the utility in Ann Arbor during the century. He presented Jack D. Hogan, the present district general manager, with a plaque commemorating the anniversary.

Fred A. Kaiser, vice-president and sales manager, was toastmaster and introduced Mrs. Barbara Dolan of Greenville, who won the Mrs. Michigan contest.

The dinner climaxed a month-long celebration studded with special newspaper and radio publicity. During this month, local dealers held a 100th anniversary sale.

Northern Illinois would develop new underground storage field

NORTHERN ILLINOIS Gas Co. has asked the Illinois Commerce Commission for approval of its plans to develop an underground gas storage field on a pilot basis at Troy Grove near LaSalle, Ill.

Preliminary geological studies and numerous

test drillings the past few months indicate there are porous sandstone formations about 1,400 feet below the surface which may prove suitable when fully developed to store natural gas for use by customers on peak winter days. It will take at least a year before the com-

pany can be assured whether or not the Troy Grove structure might serve as a reservoir.

The utility is also studying the possibilities of other similar porous sandstone formations in the general Troy Grove area that also might be used for storage.

Gas utility and pipeline industry sets new safety mark

THE SAFETY RECORD set by gas utility and pipeline companies during 1957 was the best in the industry's history. A. G. A. announces in summarizing the annual report of its Accident Prevention Committee. A. G. A. notes that 1957 was the tenth consecutive year in which the safety record has been improved.

An all-time low figure of 8.55 disabling injuries per million man-hours was established last year, compared with the post-war peak of 21.86 in 1947 and the best previous record of 8.68 achieved in 1956. The Association's report is based on returns from 434 companies representing more than 95 per cent of the industry's total of about 205,000

employees.

Gas utility and pipeline companies also registered a new low in terms of accident severity. The severity rate—the number of days charged to disabling injuries per million man-hours worked—dropped from 652 in 1956 to 447 last year. The peak year for severity was 1947 when the rate was 1277.

ALG takes first place in C of C economic understanding competition

FIRST PLACE AWARD in the U.S. Chamber of Commerce annual Economic Understanding competition was conferred upon Arkansas Louisiana Gas Co., at the National Chamber's 46th annual meeting in Washington, D. C.

J. R. Merryman, assistant personnel manager, received the ALG award in behalf of W. R. Stephens, president and chairman of the board, at the Chamber's Leadership Recognition dinner in the Sheraton-Park Hotel.

Arkansas Louisiana Gas Co. is among more than 100 business firms which competed in the 1957 Economic Understanding awards program. Contest entries are divided into five groups, based on number of employees,

and ALG was the national winner in its category.

The program is designed to recognize outstanding achievement for successful activities in developing a better understanding of the operation of business and the economic system. Basis of judging is the most effective use of employee communication media. To be eligible for an award, an entry must have shown evidence of a well-rounded employee communications program, using two or more media. Entries were evaluated by a panel of judges selected for their competence in the field of employee communications.

Arkansas Louisiana Gas Co. has been the recipient of three other awards this year.

These include the Certificate of Excellent Management for 1957, awarded by the American Institute of Management on the basis of a systematic, ten-point comparative study of the best managements in the United States and Canada.

The Department of Defense Reserve Award was presented in March citing the company for outstanding cooperation with reservists and reserve activities.

The United Shareholders of America has recognized the company's efforts to maintain and promote good management-shareholder relations by awarding ALG the 1957-58 United Shareholders "Good Corporate Citizenship" certificate of merit.

Over 7,000 Gaslites sold in 30-day employee sales contest

A TOTAL of 7,211 outdoor gas lights were sold on the Arkansas Louisiana Gas Co. system during a recent 30-day employee sales contest. This climaxed a 10-week campaign by the sales department, during which a total of 12,940 of the Gaslites were placed on ALG's system.

B. E. Harrell, vice-president in charge of sales, reports that this contest between employees in the Arkansas and the Louisiana-Texas operating divisions was conducted without any additional expense in company operations. "We didn't offer any prizes, gave no bonuses, hired no additional salesmen, offered no subsidies," Mr. Harrell said. "At the beginning of the contest we asked department heads to release two regular employees each day on a rotating basis, so that these employees could devote that day to selling gas lights. . . . However, it was the one and two sales per day by employees during off-duty hours which swelled the total."

Considerable publicity was generated by the campaign, and in several sections of the area mayors of local towns proclaimed "Gaslite Week" to their citizens. Directly after the contest was concluded, the mayor of Little Rock proclaimed May as "Gaslight Month."



Soft, decorative, and useful are the 67 Arkla Gaslites gracefully lining the entrance to a swank country club. The club is the new \$600,000 East Ridge Country Club located near Shreveport, La.

AMA to hold seminar on industrial development

AS THE START of its summer program on the campus of Colgate University, Hamilton, N. Y., the American Management Association will hold a special seminar on how to increase the effectiveness of industrial development activities. Cost of the Aug. 4-8 orientation seminar will be \$350 for AMA members, and \$400 for non-members; this fee includes tuition, seminar materials, food and lodging, and recreational facilities. The

seminar, to be led by John D. Adams of the Des Moines Chamber of Commerce, includes 10 speakers who are leaders in industrial development. Special topics that will be considered are: objectives and current status of industrial development organizations; how to handle the prospect; what an area development man needs to know about taxes; industrial development financing; how to get maximum mileage from the promotional dollar; tools

for doing a good industrial development job; relationships with brokers, consultants, and other development agencies; one company's criteria for locating medium-sized facilities; and what a large corporation needs and has a right to expect from industrial development organizations. For further information on this seminar, contact: Registrar, AMA Summer Program, American Management Association, 1515 Broadway, New York 36, New York.

Survey of residential gas service shows data on each county

A DETAILED ANALYSIS of the residential gas service provided by utility companies in every gas-consuming county of the U. S. has just been made available in a new 137-page survey report published by A. G. A. Bureau of Statistics. Cost is \$3 a copy.

A. G. A.'s third "Survey of Residential Gas Service by County" is based on data reflecting industry operations as of Oct. 31, 1957.

The previous study, issued in 1953, re-

ported the residential gas picture as of Sept. 1, 1952.

In its new publication, the Association includes the names of each county's utility companies, the characteristics of the gas distributed, the total number of residential customers, and the estimated number of families served by each company. Statistics on appliance saturation show the approximate percentage of each utility's customers using gas ranges, water heaters, dryers and

househeating equipment in their homes.

While the study included companies which distribute LP-Gas through utility mains, it excluded companies distributing gas in bottles or tanks.

Nearly 700 gas utilities participated in the A. G. A. survey. Cooperating companies included utility systems which serve a total of 27.1 million consumers and represent approximately 95 per cent of the industry's residential customers.

Columbia Gas System would acquire Gulf Interstate Gas

COLUMBIA GAS SYSTEM may acquire nearly all of the assets of Gulf Interstate Gas Co. The transaction is subject to the approvals of stockholders of Gulf Interstate and of government agencies, which will be sought in the near future. The holders of each share of Gulf Interstate common stock would receive 0.79375 share of common stock of Columbia, and Gulf Interstate would be dissolved when the transaction is concluded, which is expected to be before Dec. 31.

Gulf Interstate owns and operates a natural gas pipeline system consisting of 860 miles of 30 inch main transmission pipeline from

Louisiana to West Virginia. The company also owns 350 miles of lateral and gathering lines in Louisiana. The main 30-inch pipeline has 10 compressor stations each with 14,000 horsepower. Five of these compressor stations are automatically operated by remote control.

Gulf Interstate Co., a wholly owned subsidiary of Gulf Interstate Gas Co., will not be acquired by Columbia but will be sold or otherwise distributed to the stockholders of Gulf Interstate. This subsidiary of Gulf Interstate owns some miscellaneous oil and gas properties but is primarily engaged in consulting, engineering and designing in

natural gas and related fields. The company has a contract to engineer and design the facilities of Transwestern Pipe Line Co. which proposes to build a natural gas pipeline system from West Texas to California.

Hy Byrd and F. S. Young, now serving as president and vice-president of Gulf Interstate Gas Co., would continue in the same positions with the Gulf Interstate Co. The present key engineering personnel of Gulf Interstate Gas would serve in their respective capacities with the new company. Gulf Interstate Co. has been retained to render engineering services to Columbia and its subsidiaries.

Twenty General Management Conference papers available

AVAILABLE from the A. G. A. Order Department are 20 papers presented at the recent General Management Section Conference. The cost is 25 cents per paper.

Titles and authors of general sessions papers are: "Marketing Research: A Guide to Management Decision," William Parker of Ketchum, MacLeod & Grove; "Today's Frontiers of Science Point to Bright Future for the Gas Industry," Dr. Martin A. Elliott of Institute of Gas Technology and Marvin Chandler of Northern Illinois Gas Co.; "Gaining Management Support for Inventory Control," W. Evert Welch of Minneapolis-Honeywell Regulator Co.; "What's Ahead for American Business?" J. Philip Wernette of University of Michigan; "Managing the Gas Utility's Finances," L. S. Reis of Reis

and Chandler; "The Changing Gas Industry: Manpower Implications," Dr. Eli Ginzberg of Columbia University.

The following are titles and authors of luncheon and afternoon session papers: "The Gas Industry—Today and Tomorrow," C. S. Stackpole of A. G. A.; "Testing and Training for Accident Prevention," Dr. James N. Mosel of George Washington University; "Economic Implications of Gas Air Conditioning," Scott Hughes of Southern Union Gas Co.; "Measuring Purchasing Performance," S. Lloyd Nemeyer of Milwaukee Gas Light Co.; "Flexible vs. Compulsory Retirement Policies: Some Economic Values," D. S. Sargent of Consolidated Edison Co.; "Gas Air Conditioning," a panel discussion; "Recent Regulatory Actions—Their Implications

for the Gas Industry," R. S. Quig of Ebasco Services; "The Long-Term Outlook for Energy Demand and the Use of Gas," Daniel Parson of A. G. A.

Purchasing and stores papers and authors are as follows: "Tomorrow's Warehouse Today," G. A. Absher of Southern California Gas Co.; "Pipe: Control of Our Key Item," panel discussion; "Material Handling Subcommittee Report," Fred McCarroll of Texas Eastern Transmission Corp.; "Report on Education of Employees on the Cost of Material," Roy L. Groves of Oklahoma Natural Gas Co.; "Standardization Subcommittee Report," Pat H. Butler Jr. of Washington Gas Light Co.; and "Disposition of Obsolete and/or Surplus Materials," D. L. Sherer of Mississippi Valley Gas Co.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **Algonquin Gas Transmission Co.** filed an application requesting authorization to construct a 4,000 horsepower compressor station at Cromwell, Conn., at an estimated cost of \$1.8 million. These facilities will increase the safety factor between system requirements and system capacity from the present 7.2 million cubic feet to 34.6 million cubic feet.

● **Lone Star Gas Co.** has received approval of its \$1.8 million budget type application, covering the construction and operation of natural gas pipeline facilities which are designed to secure additional reserves from producers in the area. The cost of each project is limited to \$350,000.

● **Michigan Wisconsin Pipe Line Co.**, in a decision filed by Presiding Examiner Purdue, has been authorized to construct \$19.5 million of natural gas facilities, in order to expand system capacity by 40 million cubic feet daily. The authorization includes a 56 mile lateral line to the Laverne Field, Okla., nine main line compressor stations aggregating 31,500 horsepower, and a 21 mile loop line to the Austin storage field, in Michigan. Upon resumption of hearings, July 8, the Commission will consider allocation of the additional gas, and also the construction of other facilities estimated to cost about \$2.6 million. The company proposes to supply 10 million cubic feet daily to its affiliate, Michigan Consolidated Gas, and the balance to its other customers. The Presiding Examiner stated that although the amount of gas available to the company is unknown, it is clear that the reserves will support daily deliveries in excess of 40 million cubic feet daily for about 17 years, and in lesser quantity thereafter. As a condition to the authorization the company is restricted from using any of the new reserves for firm service, or for deliveries to any new customer unless authorized by the FPC.

● **New York State Natural Gas Corp.** has received temporary authority to construct and operate natural gas facilities in Pennsylvania at an estimated cost of \$924,000. The authorization consists of replacing 13 miles of 12 inch pipe with an equivalent amount of 30 inch pipe, to help meet increasing demands of existing customers in New York and northern Pennsylvania.

● **Ohio Fuel Gas Co.** has applied for authority to construct about 51 miles of natural gas pipeline in Ohio, in part to replace about 39 miles of pipeline to be abandoned. This project, expected to cost around \$2.1 million, will loop or replace existing lines to provide adequate service for present customers during the 1958-59 winter. In another action, the company received temporary authorization to convert the depleted Medina, Ohio, gas producing area into an underground storage field. The initial conversion cost is estimated at \$2.2 million and the ultimate cost will be around \$5 million.

● **Tennessee Gas Transmission Co.** received temporary authority to construct and operate a 6,000 horsepower compressor station in Pennsylvania, at a cost of about \$2.2 million. This project will enable the company to store up to 4.6 billion cubic feet of natural gas for the Consolidated Edison Co. of New York, and up to 1.4 billion cubic feet for the Brooklyn Union Gas Co. During the winter months Consolidated Edison can secure 30.6 million cubic feet daily, while Brooklyn Union Gas will receive 15.3 million cubic feet daily.

● **Texas Gas Transmission Corp.** has received approval of its \$4 million budget type application covering the construction and operation of natural gas facilities designed to secure additional gas reserves when available. No single project is to cost in excess of \$400,000. In another application, the company is requesting authorization to construct and operate approxi-

mately 13 miles of loop line in Louisiana, at a cost of about \$725,000, to make certain it will be able to deliver the required quantities of gas from the Lake Arthur area, and to increase the flexibility of its south Louisiana system.

● **Trunkline Gas Co.** has been authorized to construct two 24 inch pipelines, crossing the Red River in Louisiana, at an estimated over-all cost of \$1.8 million. These facilities will provide greater protection against any possible curtailment of service.

● **United Fuel Gas Co.** recently filed an application seeking authority to activate an additional underground storage pool in West Virginia with the construction of 3.3 miles of 16 inch line from the Coco compressor station to the new field, and 7.3 miles of storage field pipeline and measuring facilities. Including abandonment of nearly 5 miles of production line, the estimated cost will be approximately \$1.6 million.

Rate cases

● **Mississippi River Fuel Corp.**'s proposed \$4 million, or 16.1 per cent, annual wholesale natural gas rate increase, has been suspended until Nov. 1. Then the new rates, affecting 14 wholesale customers in Arkansas, Missouri, and Illinois, may be collected subject to refund. The company claims higher operating costs, a 7.5 per cent return on pipeline investment, and a 10 per cent return on its production investment, in its plea for rate relief.

● **Natural Gas Pipeline Co. of America** and **Texas Illinois Natural Gas Pipeline Co.** have been permitted to substitute lower rates, subject to refund, in lieu of previously suspended increases. Natural Gas Pipeline substituted a \$1.7 million annual increase for the \$6.4 million increase suspended since last December. Texas Illinois substituted a \$1.6 million increase for its previ-

ously suspended \$2.7 million filings. Both of the substitute increases are based on a 6 per cent rate of return instead of the 6.5 per cent sought in the original filings. Since customers of both companies consented to the amended filings, the companies were permitted to file undertakings, rather than bonds, to cover any refunds which may be ordered. The customers affected by the increases serve markets in Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Wisconsin.

● **Northern Natural Gas Co.** filed a proposed \$8.1 million, or 8 per cent, annual wholesale natural gas rate increase which would affect 34 wholesale customers in Iowa, Kansas, Minnesota, Nebraska and South Dakota. Since Aug. 27, 1957, the company has been collecting, subject to refund, a \$6.5 million increase. Permian Basin Pipe Line Co., an affiliate, filed a companion proposal amounting to \$762,000 annually for sales to Northern Natural. Both companies claim a 6.5 per cent rate of return.

● **South Georgia Natural Gas Co.** was permitted to put into effect on April 16, a \$158,000 annual wholesale natural gas rate increase, to substitute for an original \$305,000 increase suspended last October. The amended filing reflects a reduced rate increase proposed by the company's supplier, Southern Natural Gas Co. The South Georgia

rate increase affects 15 wholesale customers in Florida and Georgia and is subject to refund.

● **United Gas Pipe Line Co.** has applied for a proposed \$7.7 million, or 3.2 per cent, annual wholesale natural gas rate increase. This would affect about 50 customers in Alabama, Florida, Louisiana, Mississippi, and Texas. The latest proposal is in addition to a \$5.4 million increase, effective last Dec. 1, and two prior increases filed in September 1955, and May 1956, totaling nearly \$17 million, which are being collected subject to refund. The company claims increased cost of purchased gas and a 6.75 per cent rate of return to justify its latest proposal.

In other FPC actions, Transcontinental Gas Pipe Line Corp., in a decision rendered by Presiding Examiner Woodall, has been authorized to construct and operate the necessary facilities to provide natural gas transportation service for Virginia Electric Power, at an estimated cost of \$2.4 million. The company will deliver interruptible volumes, up to 26 million cubic feet daily, of natural gas purchased from Union Oil Co. by Virginia Electric Power, to the Possum Point Generating plant. At a cost of 14.8 cents per thousand cubic feet, the transportation service would result in a rate reduction for electric customers through a fuel adjustment clause. At the same time, the

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—APRIL 1958

	Number	Annual Amount
Tax rate increases allowed without suspension	3	\$ 298
Other rate increases allowed without suspension	42	100,869
Rate increases suspended	53	593,018
Total rate increases	98	694,185
Tax rate decreases allowed without suspension	3	586
Other rate decreases allowed without suspension	1	3,738
Total rate decreases	4	4,324
Total rate filings	732	
Total rate filings acted on from June 7, 1954 to April 30, 1958	29,229	
Rate increases disposed of after suspension (during April)	19	165,845
Amount allowed		118,399
Amount disallowed		15,636
Amount withdrawn		31,810
Rate increases suspended and pending as of April 30, 1958	1,269	\$56,664,168

examiner stated that gas customers would benefit from the transportation service, because it not only effects winter peaking service at substantial savings to users, but also supports and contributes to the fixed costs of rendering firm service. In the same order, the company was ordered to supply winter peaking service to Washington Gas Light, and to Commonwealth Natural Gas.

Roundup of gas company annual reports for the year 1957

• **Arizona Public Service Co.**, in its annual report for 1957, announces that revenues from gas operations totalled nearly \$12.8 million, as compared with \$11.6 million in 1956. In both years, gas operating revenues were about one-quarter of total revenues. During the year, the number of gas customers rose from 147,000 to 158,000.

• **Boston Gas Co.** reports 1957 revenues of \$33 million, of which \$30 million came from the sale of gas. Net earnings were nearly \$1.8 million, a slight decrease due to increased expenses. Actual sales of gas increased 2.6 per cent over 1956, and this increase if adjusted to normal weather would indicate a gain of nearly 7 per cent, according to the report.

• **Canadian Western Natural Gas Co. Ltd.** announces that net revenues from the sales of gas rose from nearly \$10 million to over \$10.5 million; however, an increase in operating expenses caused net operating income to decline from about \$2.3 million in 1956 to about \$2.2 million in 1957. Net income, about \$1.2 million, also was a decline from the previous year's figure. Number of customers rose by about 5,000 for a total of over 73,000.

• **Colorado Interstate Gas Co.** announces that during 1957 natural gas sales were at an all-time high—272 billion cubic feet, or an increase of more than 20 per cent over 1956 when the previous record was set. Operating revenues amounted to \$56.7 mil-

lion, also an increase of 20 per cent. Consolidated net income rose from over \$3.8 million to nearly \$4.5 million.

• **Lone Star Gas Co.** and its subsidiary, Lone Star Producing Co., reached a record net income of \$14.9 million in 1957. The increase amounted to about \$800,000. Operating revenues, also a record, topped \$104 million. Revenues from natural gas were nearly \$85.9 million, and revenues from LP-Gas sales nearly \$2 million. Customers totalled over 17,000—2,500 more than in 1956.

• **New England Electric System**, in its 50th year, had gross gas operating revenues of \$20.6 million from the sales of gas. This was about 13 per cent of total gross revenues. Sales of gas measured in cubic feet rose about eight per cent over 1956. The average number of gas customers during the year was about 243,000; 41,000 new gas customers were acquired in the summer with the purchase of Lynn Gas & Electric Co.

• **Northern Ontario Natural Gas Co. Ltd.** has secured long-term agreements (including agreements with its affiliate, Twin City Gas Co. Ltd.) to supply nearly 67 million cubic feet of gas daily to major industrial users. The company, incorporated in 1954 to distribute Alberta natural gas from the Trans-Canada pipeline to communities in Northern Ontario, completed its initial

public financing last June. Construction is well advanced, the annual report states, and costs are running lower than estimated.

• **Peoples Gas System** of Florida had operating revenues of \$5.5 million, as compared with \$5.1 million the year before. Gross income came to about \$1 million, and net income to \$347,000 as compared with \$291,000 in 1956.

• **Portland Gas & Coke Co.'s** income statement showed operating revenues up \$2.6 million for a total of nearly \$16 million. Net operating revenues totalled \$2.4 million. Net income reached nearly \$1.4 million. Sales to industrial customers showed by far the greatest share of increase in gas sales, and accounted for more than 122 million therms of new load. Total gas sales volume was 203 million therms.

• **Southern Union Gas Co.** and subsidiary recorded new highs in number of customers served (312,000), in volume of gas sold (110 billion cubic feet), in gross revenue (\$38.3 million), and in total assets (\$15.4 million). Net income totalled \$4.1 million, an increase of 2 per cent.

• **Union Gas Co. Ltd.** and subsidiaries announce that for the year ending March 31, 1958, consolidated net earnings totalled nearly \$2.6 million, an increase of about \$2 million; and volume of gas sales totalled a record 17.5 billion cubic feet.

WUA elects Larkin, re-elects Willson



Floyd A. Larkin

NEW OFFICERS of the Wisconsin Utilities Association, elected by its membership through mail ballots, were installed at a dinner-meeting May 16 at Milwaukee's University Club. Chief executives and department heads of utilities and past presidents of the organization participated.

Floyd L. Larkin, vice-president in charge of industrial relations, Wisconsin Electric Power Co., was elected president of the association. Mr. Larkin is a member of the boards of Wisconsin Natural Gas Co. and Wisconsin Michigan Power Co.

As WUA president, he succeeds S. Lloyd Nemeyer, president of the Milwaukee Gas Light Co., who has moved up to board chairman.

Stuart V. Willson, president of Northern States Power Co., was re-elected vice-president, and Earl G. Frank, secretary of Milwaukee Gas Light Co., was re-elected treasurer.

Ends appliance sales

LONG ISLAND Lighting Co. has announced that it is going out of the retail merchandising of appliances, both gas and electric, as of July 1. Wilmot O. Smith, LILCO vice-president in charge of gas and electric sales, reported that "concurrently with the tremendous growth of population and business and industry development has come the local shopping area and shopping centers. Whereas a few years ago LILCO's business and service offices were among the very few gas and electric retail appliance outlets, now there are modern well-lit showrooms in practically every community throughout Long Island. These are run by progressive, well informed dealers," he stated. "LILCO is going out of the retail selling of appliances in favor of the local merchant who is well qualified to give the consumer what he wants." Mr. Smith revealed that LILCO's advertising campaign making the announcement on discontinuance of retail merchandising would cover "factors such as promotion of 'Look for the LILCO Emblems.'"

A.G.A. announces new publications

GENERAL

- 1957 A. G. A. and PAR Annual Report. Free.

PROMOTION

- Gas Air Conditioning Newsletter, Vol. 1, No. 2. Free.

STATISTICAL

- Monthly Bulletin of Utility Gas Sales, May 1958. Free.
- Load Characteristics of Gas Heating Customers, No. 3, June 1958. \$1.50.
- Survey of Residential Gas Service by County. \$3.

Lone Star, Iowa Electric, win awards for tie-in with magazine kitchen

A NEW ALL-GAS "Party Pantry Kitchen for Families with Children," presented editorially in *Parents'* magazine's May issue, was promoted with the cooperation of A. G. A. by more than 280 gas utilities from coast to coast. *Parents'* listed participating companies in the May issue and supplied special merchandising material.

Photographs of the tie-in displays sent *Parents'* were judged, and gold wristwatches were awarded for the most effective promotions.

Winners were Aubrie Owens, display supervisor, Lone Star Gas Co., and Ivan Ziegenbusch, division manager, Iowa Electric Light and Power Co.

In addition, the kitchen was exhibited by Equitable Gas Co. during April and May, and will be at The Cincinnati Gas and Electric Co. until the end of the year.

The magazine's newest all-gas kitchen plays a dual role to offer everything families with children need and want. For mother,

there is the completely equipped cook center arranged in a step-saving "L". Equipment includes a four-burner gas cooking unit with spillaway trays, an instant lighting automatic wall oven-broiler, and an easy loading dishwasher with rotating top rack.

Directly opposite is the party pantry. It contains standard kitchen equipment but in smaller size. It is ideal for teen-age snacks and Dad's concoctions, and a convenient auxiliary kitchen for special occasions.

Cowan wins new gas appliance trophy



The first Arthur Theobald Award, created in honor of the late charter member of the West Coast Chapter of the Gas Appliance Engineers Society, is presented at a meeting of that group to E. J. Cowan (l.), Williams Furnace Co. Presenting award is F. O. Suffron, American Metal Products

New Maytag headquarters

CONSTRUCTION of a headquarters building for Maytag Co. was started last month in Newton, Iowa. When completed in about 18 months hence, the 132,000-square-foot building will be four times the size of the present Maytag main office, which is to be incorporated into the new structure, making a single, integrated building. It will be faced with two-story precast concrete panels with an exposed aggregate finish. The pattern on the decorative, buff-colored panels is an original sculpture designed for the building by a Los Angeles artist. The structure will be trimmed in Italian mosaic tile with a transparent bronze cast. Vertical tile strips containing slot windows will separate the panels at intervals for decorative effect.

Lowers gas rates

ABOUT 51,500 residential and commercial users of natural gas in North and South Carolina will realize a \$400,000 saving per year after July 1 when Piedmont Natural Gas Co. institutes an average 6 per cent rate reduction. This rate reduction, the first in the company's history, was made possible by an outstanding record of consumer acceptance. This is the first rate change for Piedmont Natural since 1952.

New A.G.A. members

Associate Members

Tracy-Locke Co. Inc., Dallas, Texas. (Eugene B. Thomas, Acct. Executive)
Weather Corp. of America, St. Louis, Mo. (W. J. Hartnett, Pres.)

Individual Members

Charles T. Abbott, NEGEA Service Corp., Cambridge, Mass.
Lyle F. Albright, Purdue University, Lafayette, Ind.
John E. Allen, Public Service Electric & Gas Co., East Orange, N. J.
Louis P. Armbricht, Houston Natural Gas Corp., Houston, Texas.

Sam Beasley, Pacific Telephone & Telegraph Co., Seattle, Wash.
John T. Bills, Peoples Gas System, North Miami, Fla.
Gerard C. Boeve, Peoples Gas System, North Miami, Fla.
Newton H. Bollinger Jr., Peoples Gas System, North Miami, Fla.
Verl T. Bond, Pacific Gas & Electric Co., Eureka, Calif.
Frederick L. Brown, New York State Dept. of Public Service, New York, N. Y.
J. R. Buck, Northern Natural Gas Co., Omaha, Nebr.
Raymond V. Burnette, Rockwell Mfg. Co., Chicago, Ill.

Arthur H. Cannon, Transcontinental Gas Pipe Line Corp., Houston, Texas.
Jim Carll, Lone Star Gas Co., Dallas, Texas.
Kenneth J. Chastain, Peoples Gas System, North Miami, Fla.
Charles H. Conway, Southern Counties Gas Co., Los Angeles, Calif.
G. P. Cornwell, Pacific Gas & Electric Co., Eureka, Calif.

John J. Daniel, Iowa-Illinois Gas & Electric Co., Davenport, Iowa.
Frank R. Davis, Jr., Davis Emergency Equipment Co., Newark, N. J.
George C. Davis, Winnipeg, Man., Can.
Malcolm R. Davis, Southern California Gas Co., Arlington, Calif.
William N. Decatur, City & County Gas & Electric Appliances, St. Petersburg, Fla.
Joseph N. de Raismer Jr., Union Carbide Corp., New York, N. Y.
Clifford H. Domke, McKone, Badgley, Domke, Kline, Jackson, Mich.
Albert C. Dudley, The Hartford Gas Co., Hartford, Conn.

W. E. Eastman, Walworth Co., Brooklyn, N. Y.
Mason Emanuels, Mason Emanuels Co., Seattle, Wash.

Robert A. Filler, Public Service Electric & Gas Co., Paterson, N. J.
J. J. Finnegan, Northern Natural Gas Co., Omaha, Nebr.
Thomas L. Fitch, J. Stephen Watkins, Consulting Engineers, Lexington, Ky.

Henry R. Flanagan, Philadelphia Electric Co., Philadelphia, Pa.
R. P. Foley, Peat, Marwick, Mitchell & Co., Los Angeles, Calif.
Lewis E. Forein, Southern Counties Gas Co., Los Angeles, Calif.
Bernhard T. Franck, Milwaukee, Wisc.
Wendell B. Freeman, General Electric Co., San Francisco, Calif.
Charles G. Freund, Natural Gas Pipeline Co. of America, Chicago, Ill.

William H. Gehl Jr., Northern Illinois Gas Co., Joliet, Ill.
Billy J. Glascock, Southern Union Gas Co., Flagstaff, Ariz.
J. M. Graham, Vancouver, B. C., Can.
J. O. Grantham, Northern Natural Gas Co., Omaha, Nebr.
Mortimer P. Griffith, NEGEA Service Corp., Cambridge, Mass.

Roy E. Hackman, Tucson Gas, Electric Light & Power Co., Tucson, Ariz.
Dean Hale, American Gas Journal, Dallas, Texas.
R. H. Hallgren, Northern Natural Gas Co., Omaha, Nebr.
John Hanna, Public Service Electric & Gas Co., Newark, N. J.
R. G. C. Hansford, The City of Santos Improvement Co., Ltd., Santos, Brazil.
David M. Heskett, Tucson Gas, Electric Light & Power Co., Tucson, Ariz.
Edward N. Heard, Houston Natural Gas Corp., Corpus Christi, Texas.
Howard Higgins, Alabama Gas Corp., Birmingham, Ala.
R. W. Horton, Pacific Gas & Electric Co., Bakersfield, Calif.
Cecil H. Huey II, International Business Machines Corp., Dallas, Texas.

E. J. Jennings, New York State Electric & Gas Corp., Lockport, N. Y.
Howell G. Kanode, West Ohio Gas Co., Lima, Ohio.
Sidney Katell, Bureau of Mines, U. S. Dept. of Interior, Morgantown, W. Va.
Norman E. Kenyon, Michigan Consolidated Gas Co., Detroit, Mich.
R. T. Klemme, Northern Natural Gas Co., Omaha, Nebr.
C. Kuhn, Dresser Manufacturing Div., Bradford, Pa.

Miles E. Lanty, Southern Counties Gas Co., Fullerton, Calif.
George W. Leidholdt, Central Indiana Gas Co., Muncie, Ind.
Forrest W. Lewis, Texas Gas Transmission Corp., Owensboro, Ky.
Lewis K. Lucas, The Ohio Fuel Gas Co., Zanesville, Ohio.
C. A. Lund, City of Duluth, Water, Gas & Sewage Treatment Dept., Duluth, Minn.

John MacLachlan, NEGEA Service Corp., Cambridge, Mass.
L. S. Marshman, Socony Mobil Oil Co., Inc., New York, N. Y.
J. S. McClure, Oronite Chemical Co., San Francisco, Calif.
John M. McElderry, West Ohio Gas Co., Lima, Ohio.
J. L. Miller, National Carbon Co., Cleveland, Ohio.

Joseph N. Mollick, Philadelphia Electric Co., Philadelphia, Pa.

Edward A. Nash, Norge Sales Corp., Chicago, Ill.
M. L. Nelson, Northern Natural Gas Co., Omaha, Nebr.
F. C. Nicholson, Northern Natural Gas Co., Omaha, Nebr.

Robert Oliver, Pacific Gas & Electric Co., Hayward, Calif.

A. Persons, Southern Union Gas Co., Farmington, N. M.
J. C. Plourde, Northern Natural Gas Co., Omaha, Nebr.
Robert A. Pointon, Public Service Electric & Gas Co., Trenton, N. J.
Russell A. Prowse, Garland Commercial Ranges Ltd., Toronto, Can.
Abbott A. Putman, Battelle Memorial Institute, Columbus, Ohio.
Keith M. Pyburn, Texas Eastern Transmission Corp., Washington, D. C.

W. J. Quinlan, Northern Natural Gas Co., Omaha, Nebr.

James B. Randel Jr., Public Service Electric & Gas Co., Newark, N. J.
James W. Reed, The Cooper-Bessemer Corp., Los Angeles, Calif.

Ronald R. Santos, Louisiana Power & Light Co., Gretna, La.
Alvin B. Schloemer, Iowa-Illinois Gas & Electric Co., Rock Island, Ill.
Francis J. Scott, Tucson Gas Electric Light & Power Co., Tucson, Ariz.
Walter F. Sondermann, Long Island Lighting Co., Garden City, N. Y.
J. M. Stearns, Pacific Gas & Electric Co., Eureka, Calif.
Marlon J. Stone, Pacific Gas & Electric Co., San Rafael, Calif.
Harian D. Striff, Pacific Lighting Gas Supply Co., Los Angeles, Calif.
James M. Stuart, The Dayton Power & Light Co., Dayton, Ohio.

Weldon L. Thomas, Southern Technical Institute, Chamblee, Ga.
Mervin B. Tretter, Northern States Power Co., Minneapolis, Minn.

John K. Vaughan, Southern Union Gas Co., El Paso, Texas.

L. M. Ward, Northern Natural Gas Co., Omaha, Nebr.
Thomas J. Watt, The Sprague Meter Co., Bridgeport, Conn.
Arthur Weichelt, Midwest Natural Gas Corp., Chicago, Ill.
Arthur D. Wells, Empire Gas Appliance Corp., Hornell, N. Y.
Frank F. Wiggs, Tyler Gas Service Co., Tyler, Texas.
Winfield C. Williams, Pacific Gas & Electric Co., Barstow, Calif.
William B. Withers Jr., Commonwealth Services, Inc., Houston, Texas.

F. Yacconi, Southern Union Gas Co., Pecos, Texas.

Parks retires from Colorado utility; Miller elected to succeed



F. Tom Parks



D. J. Miller

FTOM PARKS, vice-president and member of the board of Public Service Co. of Colorado, retired recently after 41 years in the utility industry. D. J. Miller has been elected as vice-president, gas operations, to succeed him. At the same time the company elected O. P. Reed as vice-president, employee relations, and W. D. Virtue, M. M. Koch, and R. T. Person as executive vice-presidents.

Mr. Parks entered the utility industry in 1916, when he joined Cities Service Co. There he was given assignments in refineries, oil and gas production, gas transmission, and gas distribution. He was then permanently assigned to the distribution division. With Cities Service, Mr. Parks served as local manager at Arkansas City; superintendent of gas distribution out of the company's Bartlesville office; manager of the Joplin Gas Co. and also division manager of the Joplin division of Gas Service Co.

Mr. Parks moved to Colorado in 1928, and was placed in charge of gas operations in the state. Under his direction natural gas was introduced into Denver and other towns served by Public Service Co. of Colorado. He also supervised the introduction of natural gas into Pueblo, Colo., and Cheyenne, Wyo.

He became a member of the board of Public Service in 1939 and served in that capacity until 1943, when he was elected vice-president. He was re-elected to the board in 1947

and retired from that position in April of this year.

His interests and activities in the utilities field include directorship in the Colorado Interstate Gas Co., the Colorado Oil and Gas Corp. and Natural Gas Producers, Inc. He will retain his interest in the gas industry as a consultant.

Mr. Parks is a member of the Rocky Mountain Gas Association; the Pacific Coast Gas Association; and the American Gas Association, in which he just completed two terms as a director.

Both Mr. Miller and Mr. Reed have had long experience with the company in various executive capacities and have been members of the company's management staff. Mr. Miller succeeds Mr. Parks as a member of the company's board. Mr. Reed, prior to his appointment as manager of employee relations in February 1957 was vice-president and general manager of the Cheyenne Light Fuel and Power Co., a wholly owned subsidiary.

Personal
and
otherwise

Larson named general sales manager

BURT LARSON has been appointed general sales manager of Southern Counties Gas Co. Mr. Larson has served as the gas company's manager of residential sales since 1951, and will retain the residential sales duties as part of his new post. Mr. Larson joined Southern Counties in its Santa Monica Bay division in 1939. He rose through the ranks both in operating and customer service work, and started in the division's sales department in 1946. He served as special repre-

sentative, dealer representative, and staff assistant prior to being promoted to the utility's general office in Los Angeles in 1951. Mr. Larson served as chairman of the Pacific Coast Gas Association's sales and advertising section in 1956 and 1957; chairman of its Appliance Committee in 1951 and 1952; chairman of its Water Heating Committee in 1953; chairman of its Range Promotion Committee, in 1954; and as PCGA residential sponsor in 1955.

Piedmont Natural elects Armstrong secretary, Cockrell as successor

WGRAVES ARMSTRONG has been elected secretary of Piedmont Natural Gas Co., and J. O. Cockrell has been elected to succeed him as assistant secretary and assistant treasurer. The organization change is due to the greatly increased duties of E. T. Anderson, vice-president, secretary and treasurer, who will now continue as vice-president and treasurer.

Mr. Armstrong, in addition to his duties

as secretary, will head a new department charged with coordinating company safety programs and supervising employee training programs. He will also have charge of company and employee insurance programs. Mr. Cockrell will head the staff accounting department.

Mr. Armstrong, after studying business administration at the University of Mississippi, spent 12 years in the utility industry in Mis-

issippi and Florida, and joined Piedmont when it was formed in 1951. He is a member of the Southern Gas Association, the Southeastern Gas Association, and the American Gas Association.

Following graduation from the University of North Carolina with a degree in business administration, Mr. Cockrell served with Haskins & Sells for two years, and then joined Piedmont in 1953.

Recent changes announced by Columbia Gas System companies in Ohio

TWO Columbia Gas System companies have announced recent changes in management personnel.

The Ohio Fuel Gas Co. elected John M. Rutherford and John A. Bieber vice-presidents, William J. Curnow was elected treasurer, and Luther S. Williams was elected an assistant treasurer.

At Columbia Gas System Service Corp., Ohmer Ullery, assistant treasurer of Ohio Fuel since 1947, was elected to the same post in the service corporation. In that corporation's engineering department, Lowell L. Elder and Robert S. Ryan were named supervisory engineers, and Robert R. Wright and Robert M. Forrest were named assistant senior engineers.

Mr. Rutherford, former treasurer of Ohio Fuel, was elected vice-president in charge of finance and accounting. He joined the company in 1926 after four years with the Pure Oil Co. Beginning in 1947, he served five years as company secretary and was elected treasurer in 1952.

Mr. Bieber, a graduate of Ohio State University, joined Ohio Fuel Gas in 1933. In 1948 he became general sales manager, and in 1952 was elected an assistant vice-president. He will now have charge of wholesale sales.

Mr. Curnow, a graduate of Bucknell University, joined the methods department of Columbia Gas System Service Corp. in 1947. Three years ago he was transferred to another affiliate, The Manufacturers Light and

Heat Co., as assistant treasurer.

Mr. Williams joined Columbia in New York three years ago, then went to Columbus, Ohio, as executive accountant for Columbia's treasury department. Before joining the company, he worked for Pennsylvania Water and Power Co. and Safe Harbor Water Power Corp., and was elected secretary-treasurer and director of Susquehanna Transmission Corp.

Mr. Ullery has been associated with Columbia group offices as an accountant since 1922. His new duties will include coordination and general direction of all accounting and treasury activities of the service corporation. He is a member of the A. G. A. Accounting Committee.

Con Edison advances five; Gallagher and Hadden vice-presidents

BERNARD E. GALLAGHER and **Gerald D. R. Hadden** have been elected vice-presidents of the Consolidated Edison Co. of New York, and **Arthur N. Anderson** has been elected assistant vice-president.

At the same time, **Gordon R. Milne**, who has been with the Edison system since 1921, was named chief mechanical engineer; and **Charles W. Franklin**, who has been with the system since 1916, was named chief electrical engineer.

Mr. Gallagher started with the Edison system in 1930, doing meter and test work while attending Columbia Graduate school. In 1935 he was transferred to the personnel department, and rose to wage coordinator. From 1940 to 1950, he worked in various executive capacities under the company's management development program. He returned to industrial relations in 1951 as staff assistant, and in 1954 became assistant to the president. He was elected assistant vice-president in charge of industrial relations in 1956.

Mr. Hadden joined the system as a junior

engineer, after his graduation from Rensselaer Polytechnic Institute in 1931. He gained experience in laboratory and materials testing, contract inspection and control, and electrical construction. Following a period in the Navy, he was assigned to the management development program. His assignment included public relations work and direct supervision of the natural gas conversion program and of field forces concerned with emergency work. In 1955 he was named assistant manager of the station construction and shops department, and in 1956 elected assistant vice-president. Last year he assumed responsibility for the company's over-all construction program.

Mr. Anderson joined Consolidated Edison in 1933, following graduation from New York University. He held various posts in the gas production division, and in 1942 became assistant superintendent of the Hunts Point gas plant. Selected for the executive development program in 1945, he was assigned to the system engineering group and mechanical engineering department, and later returned to



B. E. Gallagher



G. R. Hadden

gas production work. In 1951, on leave from the company, Mr. Anderson went to Washington to work for the Atomic Energy Commission. The following year he was assigned to Atomic Power Development Associates, a nuclear study group. Upon his return to New York in 1954, he was named general superintendent of the Sherman Creek generating station and in 1957 became associate manager of the station construction and shops department.

Mack, Trebilcote, McInerney named at American Natural system

THE American Natural Gas Co., parent company of American Louisiana Pipe Line Co. and Michigan Wisconsin Pipe Line Co., reports that **Wilber H. Mack** has been elected executive vice-president of both transmission companies. Also announced is the promotion of **James J. Trebilcote** to manager of operations and **Charles J. McInerney** to secretary of the Michigan Wisconsin Pipe Line Co.

Mr. Mack will continue as director and general attorney for both transmission com-

panies. He is also secretary of American Louisiana, director and general attorney of the affiliated American Natural Gas Service Co., and director, vice-president, and secretary of American Natural Gas Production Co.

Before joining the American Natural system in 1952, Mr. Mack served in various legal capacities with the U.S. Securities and Exchange Commission, and rose to director of the SEC corporate finance division.

Mr. Trebilcote joined Michigan Wisconsin

in 1948, later becoming administrative assistant to the vice-president in charge of operations. He was appointed assistant manager of operations in 1952. His industry experience includes work with Oklahoma utilities.

Mr. McInerney became legal assistant to the secretary of another affiliate, Michigan Consolidated Gas Co., in 1945. He moved to Michigan Wisconsin, and was named assistant secretary in 1950. He is also an attorney for the firm, and assistant secretary of American Louisiana.

OBITUARY

Edward F. Barrett



70, a director of Long Island Lighting Co., chairman of the company's pension committee and trustee and vice-president of the East River Savings Bank, died June 30. Mr. Barrett was treasurer and a member of the board of A. G. A. from 1945 through 1953.

Mr. Barrett joined Long Island Lighting Co. in 1934 as financial vice-president and director. In 1937, he was elected president of LILCO, Queens Borough Gas and Electric, and Nassau and Suffolk Lighting Co. The last two were consolidated into Long Island Lighting Co., in 1950. He served as

LILCO's president until 1953.

In 1953 it was voted to name LILCO's newest electric generating station the Edward F. Barrett Power Station in tribute for his outstanding leadership as president and chief executive officer during a very trying period in LILCO's history. Over 300 leading business and civic leaders honored Mr. Barrett by attending the dedication ceremony.

From 1953 through 1957, Mr. Barrett was chairman of the board of LILCO. He then resigned to take the position he still held at the time of his death.

Mr. Barrett began his career in the real estate business and later served as deputy chamberlain of the City of New York from 1914 to 1918. He entered the banking business with the National City Company of New York in 1918, and in 1926 was elected a vice-president of that bank.

He was a director of the Public National Bank and Trust Company for many years until it was taken over by The Bankers Trust Co., and also director of the Nassau County Trust Co. of Mineola, again until it was merged into the Franklin National Bank.

During Mr. Barrett's presidency of LILCO, he was a vice-president and director of the Utilities Mutual Insurance Co. He also served as a governor representing the pub-

lic on the New York Curb Exchange.

He leaves his wife Elizabeth C. Barrett, two daughters, a son, a brother, and a sister.

H. P. Morehouse

assistant manager of residential sales of Public Service Electric and Gas Co. of Newark, N. J., died after a long illness. He was 59 years old.

Mr. Morehouse was a 1922 graduate of Rensselaer Polytechnic Institute, and joined the utility the same year. He started as industrial fuel representative, then became general air conditioning representative, and rose to assistant manager of residential sales.

Mr. Morehouse was extremely active in the American Gas Association, which he joined in 1923, and was also active in regional gas associations. In 1947 he was awarded the A. G. A. Gas Heating Progress Award, for his contribution toward upgrading househeating installations. In 1953 he was awarded A. G. A.'s highest honor, the Charles A. Monroe Distinguished Service Award. At the time of his death he was chairman of the A. G. A. Domestic Gas Research Committee.

Surviving are his wife Grace, a son, a daughter, three brothers, and two sisters.

Horsley retires from The East Ohio Gas Co.



G. W. Horsley

as assistant electrolysis engineer, and later held

GEORGE W. HORSLEY, senior vice-president and director of The East Ohio Gas Co., retired last month. Mr. Horsley, a veteran of 43 years service, has been a company director for 25 years. He began his career with East Ohio in 1915, upon graduation from Case Institute of Technology. He started

posts with the company's operating division, including superintendent of the Cleveland Plant. In 1926 he was named manager of the Youngstown Division, seven years later he was promoted superintendent of southern divisions, and the following year was named general superintendent. In 1950, he was made general manager.

Mr. Horsley was elected vice-president in 1951, and senior vice-president in 1956. For the past ten years he has supervised the company's employee relations.

He has been active in A. G. A., the Ohio Oil and Gas Association, and the Ohio Association of Professional Engineers.

Ramsdell director

ROBERT W. RAMSDELL, president of The East Ohio Gas Co., has been elected a director of Consolidated Natural Gas Co. He succeeds William G. Rogers, who is retiring. Mr. Ramsdell is president of two of Consolidated's subsidiaries, East Ohio and Lake Shore Pipe Line Co. of Ashtabula. Since joining East Ohio in 1928, he has held positions of division manager, general superintendent, vice-president, and executive vice-president. He has been a director of East Ohio since 1949, and president since 1957. Mr. Ramsdell has been president and director of the Lake Shore Pipe Line Co. since its acquisition by Consolidated in 1957. He is a member of A. G. A.

Changes at York

YORK COUNTY Gas Co., York, Pa., announces that T. W. McDonald, retiring chairman of the board, has been named honorary chairman, and John E. Geesey has been named president and general manager. Other top personnel who have taken on new posts are as follows: M. P. Stermer, vice-president, secretary, and treasurer; Paul W. Lauer, assistant secretary and assistant treasurer; William J. Hladick, superintendent of transmission and distribution—a newly created post; William E. Smeigh Jr., supervisor of maps and records; George H. Leckrone, purchasing agent for the transmission department; and William J. Knokey, transmission department dispatcher.

New Surface officers

SURFACE Combustion Corp. announces the election of the following new officers: James P. Farrell, vice-chairman of the board; Henry M. Heyn, president of the corporation and president of the Surface Industrial Division; Robin A. Bell, executive vice-president of the corporation and president of the Janitrol Division; and Albert J. Buckenmyer, director. Mr. Heyn, who has served on many committees of the A. G. A. Industrial and Commercial Gas Section, was vice-president and general manager of the Industrial Division prior to his promotion. Mr. Bell was vice-president and general manager of the Janitrol Division.



Henry M. Heyn

Keepers secretary

EDGAR S. KEEPERS JR. has been elected secretary and assistant treasurer of South Jersey Gas Co. A graduate of New York University School of Commerce, Mr. Keepers joined South Jersey in 1947 following a period as corporation accountant for Public Service Electric & Gas Corp. He became assistant secretary-treasurer for South Jersey in 1948. He is a member of A. G. A.

Tappan elects new president, chairman of board

W. R. TAPPAN, executive vice-president, and general manager of Tappan Co., has been elected president of the firm. He succeeds Alan P. Tappan, who has been elected chairman of the board.

W. R. Tappan, who will continue his duties as general manager, is a graduate of Denison University and Harvard Business

School. He became associated with Tappan Co. in 1939 as a sales representative. Since that time, he served as an assistant sales manager, manager of war product sales and manager of the war products division in Marion, Ohio. He was elected vice-president in 1945 and became vice-president and general manager in 1952.

Educated at Cornell University, Alan Tappan started his career with Tappan Co. in 1919 as a sales representative. In 1923 he was named plant superintendent. He was elected vice-president in charge of sales in 1931 and president in 1945. A veteran of both World Wars, he currently holds the rank of colonel in the Air Force reserves.

Texas Eastern elects Shoup vice-president, chief engineer

ANDREW J. SHOUP has been elected vice-president and chief engineer of Texas Eastern Transmission Corp. Also announced by Texas Eastern are these four promotions in the engineering department: Conrad W. Marvin, to assistant chief engineer; Jay J.

Ball, to supervising engineer; George H. Ewing, to assistant supervising engineer; and Gordon L. Jennings, to supervisor of engineering plans and research. Mr. Shoup entered the gas industry with the United Gas Co., shortly after his graduation from Louisi-

ana State University. In 1945 he formed the partnership of Minor and Shoup, consulting engineers, which occupied him until he joined Texas Eastern in 1947. As assistant engineer with Texas Eastern, he supervised the company's extensive construction activities.

Names in the news—a roundup of promotions and appointments

UTILITY

Avery C. Adams, president of Jones & Laughlin Steel Corp., has been elected to the board of Equitable Gas Co.

At the annual meeting of Portland Gas & Coke Co., Cecil V. Griffith was advanced from treasurer to controller, and Harry N. Burnside was named treasurer as well as secretary. Noble Stephens, who has been with the company for 35 years, was elected assistant secretary and assistant treasurer; he was previously general auditor.

At Dayton Power and Light Co., four

executives have been promoted. Kenneth G. Oxley has been named associate general manager; Philip K. Pfanner has been named an assistant vice-president; Robert F. Isenhardt has been named manager of the services division; and David R. Jaques has been named manager of the employees' education and information division.

Oscar R. Schneider and Walter Ullrich have been appointed assistant vice-presidents of Brooklyn Borough Gas Co. Mr. Schneider, with 31 years of service, will continue to direct the sales promotion, advertising, publicity, and customer service

departments. Mr. Ullrich, with 31 years of service in the utility industry, will retain his duties as superintendent of distribution and chairman of the company's Employee Relations Committee.

Appointment of Warren J. Collins as general counsel for Lone Star Gas Co. and its subsidiary, Lone Star Producing Co., has been announced. He succeeds Marshall Newcomb, who because of continued ill health has elected to retire. Mr. Collins began his career with Lone Star in 1928, and has been assistant general counsel since 1950. Mr. Newcomb, who has been with

Lone Star since 1927, retires as director, vice-president, and general counsel of Lone Star and its subsidiary.

Martin E. Lavens has joined the Philadelphia Gas Works as manager of the builder division. He succeeds **George W. Miller**, who is retiring after 43 years of service.

G. E. Stahl, manager of gas supply for Pioneer Natural Gas Co., has been elected a vice-president of Pioneer Gathering System, Inc., a wholly-owned subsidiary. He will continue his managerial post with the parent company.

Armor B. Martin, Washington Water Power Co. research consultant, has been appointed an assistant vice-president. Since he became affiliated with the company in 1953, he has been engaged in numerous special assignments including that of service management coordinator for the past three years for the Pacific Northwest Power Co.

John A. Schuchart has been elected an assistant secretary of Northern Natural Gas Co. Mr. Schuchart has been with Northern for eight years, and was supervisor of the document section of the secretary department prior to his retirement.

Virginia Electric and Power Co. reports the appointment of **P. W. Smith**, Portsmouth manager, to district manager of the Allegheny district. He replaces **A. LeRoy Jameson**, who was recently appointed sales manager at Richmond.

OTHER

H. C. Price Co. announces the resignation of **John M. Thomas** as vice-president. Mr. Thomas has been with the company since 1937, and is ceasing active administration in order to apply more time to his personal affairs. He will maintain association with the company as a pipeline consultant, a director, and as a director of **H. C. Price of Canada, Ltd.**

Dr. Salvatore Piccione has joined the research and development department of Pittsburgh Coke & Chemical Co. He will be assigned to the analytical and physical research section of the research and development laboratory.

MANUFACTURER

Stockholders of **Coleman Co.** have elected three new members of the board of directors. They are **Fred C. Koch**, president of Wood River Oil & Refining Co.; **Dwane L. Wallace**, president of Cessna Aircraft Co.; and **W. Erle White**, president of White Stores, Inc. The directors will fill vacancies created by the death of **Arthur B. Eisenhower**, Kansas City banker and brother of President Eisenhower; the retirement of **Walter J. Weldon**, former Coleman director of exports; and the retirement at the close of this year of **Leonard B. Walcher**, secretary of the corporation.

At **Robertshaw-Fulton Controls Co.'s** Fulton Sylphon division, two new appointments have been made. Vice-president **Woodford D. Miller**, a director of the company, has been appointed general manager of the division, and **R. E. Fitzpatrick** has been appointed a district sales manager with headquarters in Cleveland, Ohio.

John C. Wallace has been named to the

new position of vice-president, operations, of **Walworth Co.** Before joining **Walworth** in 1957, Mr. Wallace served six years with the **Hunt Spiller Manufacturing Corp.**

Several new appointments have been announced by **Mueller Climatrol**, a division of **Worthington Corp.** **H. P. Mueller Jr.**, formerly vice-president—sales, has been named executive vice-president replacing **Frank P. Nunlist**, who has been named to a post with the parent corporation. Mr. Mueller represents the fourth generation of his family to direct operational management of the manufacturing company. **Curt Hoerig**, formerly manager of manufacturing, has been named vice-president—manufacturing. **Chester Birch** has been named treasurer, a post he will hold while continuing as controller. And **William S. Malloy**, personnel manager, has been named to the additional post of secretary.

Robert C. Gundaker has joined **Chattanooga Royal Co.** as vice-president in charge of sales and advertising. Previously he was with **Sunbeam Corp.** for 11 years in various field and sales management positions.

Dravo Corp. reports that **John K. Beidler** has been named vice-president—commercial, and **H. E. Lore** has been named manager of the engineering and construction department of the machinery division. Mr. Beidler, who joined **Dravo** in 1935, has been general manager of the engineering division since 1952 and a vice-president since 1953; he is also a director of **Dravo** and executive vice-president of a subsidiary. Mr. Lore has served **Dravo** in various engineering and operating capacities since 1936.

At **M. M. Hedges Manufacturing Co.**, **Fred C. Holbrook**, former sales manager, has been advanced to vice-president, and **T. I. Mastin**, former chief engineer, has been advanced to vice-president in charge of engineering. Both men are directors of the company. Also advanced was **E. D. White**, from assistant manager of the sales department to sales manager.

Robert K. Eskew has been named director of engineering, research and development for **Arkla Air Conditioning Corp.**

Charles Lamar, formerly assistant treasurer, has been elected treasurer of **Harper-Wyman Co.** Mr. Lamar joined **Harper-Wyman** in 1937, was company chief engineer for 13 years, and later director of commercial development. Mr. Lamar is extremely active in **A. G. A.**, and has been technical advisor for four major **A. G. A.** research projects.

New regional sales manager of **Temco** is **Francis L. Early**, who will make his headquarters in **Grapevine, Texas**, a suburb of **Dallas**. Mr. Early's experience includes employment with **Bryant, Servel**, and **St. Louis County Gas Co.**

Lawrence P. O'Brien has been promoted to the newly created position of field service coordinator for **Maytag's** Cincinnati, Chicago, and Indianapolis branches. He has been with **Maytag** since 1953.

Thomas J. Watt has been appointed Eastern regional sales manager by the **Sprague Meter Co.** He has been serving **Sprague** since 1929.

CONVENTION CALENDAR

1958

OCTOBER

- 13-15 • **A. G. A. Annual Convention**, Atlantic City, N. J.
- 15-17 • **Wisconsin Utilities Association**, Hotel Schroeder, Milwaukee, Wis.
- 20-24 • **National Safety Council**, Chicago, Ill.
- 21-24 • **American Dietetics Association**, Philadelphia, Pa. (**A. G. A.** will exhibit)
- 22-24 • **Air Conditioning & Refrigeration Wholesalers, Annual Meeting**, Sheraton-Palace Hotel, San Francisco, Calif.
- 23 • **A. G. A. Midwest PR Workshop**, Hotel Sheraton-Martin, Sioux City, Iowa.
- 27-31 • **National Metal Exposition**, Cleveland, Ohio. (**A. G. A.** will exhibit)

NOVEMBER

- 3-7 • **National Hotel Exposition**, Coliseum, New York City. (**A. G. A.** will exhibit)
- 7 • **American Institute of Mining, Metallurgical and Petroleum Engineers, Annual Off-the-Record Meeting**, Pittsburgh, Pa.
- 17-20 • **American School Food Service Association**, Philadelphia, Pa. (**A. G. A.** will exhibit)
- 30-Dec. 5 • **American Society of Mechanical Engineers**, Statler Hotel, New York City.

DECEMBER

- 1-3 • **American Society of Refrigerating Engineers, Semi-Annual Meeting**, Hotel Roosevelt, New Orleans, La.
- 1-4 • **National Warm Air Heating and Air Conditioning Association, Annual Convention**, Cleveland, Ohio.
- 7-9 • **Institute of Appliance Manufacturers**, Statler-Hilton Hotel, Dallas, Texas.
- 16 • **Rocky Mountain Gas Association, Annual Meeting**, Denver, Colo.

1959

JANUARY

- 19-20 • **Industrial Heating Equipment Association**, Hotel Cleveland, Cleveland, Ohio.
- 26-30 • **American Society of Heating and Air Conditioning Engineers**, Philadelphia, Pa.
- 29-31 • **A. G. A. Home Service Workshop**, Jung Hotel, New Orleans, La.

Personnel service

SERVICES OFFERED

Sales-Minded Advertising Executive—over 16 years' experience with 3 large advertisers in every phase of advertising—management, sales promotion, merchandising, public relations and sales; giving him a solid background in media, layout, copy, production, procurement and budgets. Wide experience in the planning and development of national advertising and sales promotion programs, with collateral materials, on consumer and commercial-industrial products. Current salary \$9,600, plus. Detailed resume on request. 1914.

Sales Consultant—former utility executive with outstanding sales record in gas industry now available for spot assignments in organizing and orienting sales departments, campaigns, policies, etc. 1915.

Young Canadian Executive—chemist, 12 years' experience, domestic and overseas, sale and start-up gas production and processing plant, most recently general manager and secretary-treasurer process engineering subsidiary. Available June because of elimination these operations. Will readily accept similar management responsibility or process development work. 1916.

Administrative Officer—desires position in management or operations of utility of 150,000 meters or less. Thirty years' experience in all phases gas business with an outstanding achievement record. Active in state and national associations and wide acquaintance in the gas industry. Resume and references upon request. Available immediately. Age 52. 1917.

Regional Manager—11 years' experience in the appliance business on a national, regional, and wholesale level, six years in New York and Northeast, top full line manufacturers. Outstanding record in sales, merchandising, promotion, advertising, sales training, and administration. B.B.A. degree, majors—marketing and sales. Married, one child; willing to relocate. 1918.

Marketing & Sales Director—engineering background. Experienced in determining customer needs, guiding product development, directing sales and advertising. Background covers entire marketing chain including market research, product engineering and styling, advertising, sales management, promotion, long range planning and diversification. Marketed many products including commercial food service equipment, to industrial and institutional fields. 1919.

Administrative Petroleum Engineer—3-4 years' diversified experience gas processing, oil and gas production and transmission. Obtaining M.B.A. degree in June, available late June '58. Desire gas or petroleum economic, planning, or coordination position. Family, age 29. 1920.

District Manager—associated for 13 years with number one gas range manufacturer handling New England territory, for sale of ranges (built-in) space heating and commercial cook-

ing equipment. Have broad dealer and distributor background, also strong experience and personal contacts with gas utilities. Desire position with gas utility or manufacturer, if possible, in New England. Will re-locate. Married, age 39. 1921.

Graduate Harvard College—major economics; Yale Law School, 1957. Specialist natural gas and allied problems. Seeks employment in legal capacity. Author, "Pricing Standards for Natural Gas." Copy of treatise and statement of qualifications on request. 1922.

Industrial Sales Engineer—presently employed, desires a supervisory position with a natural gas company where experience is needed and further advancement is possible. Graduate engineer with 32 years' experience in the industrial, commercial, and central house heating fields, covering gas sales, engineering, supervisory installation and service, customer classification, rates, contract negotiations, and complaints. References, salary desired and other detailed information will be gladly furnished. 1923.

Young Man—five years' experience with top industrial advertising agency, believes he can be of value in utility company sales, promotion, advertising, or public relations department. Thorough knowledge of art production, promotions, advertising and agency contacts. Age 30. 1924.

General Manager—Operations Manager—with 20 years' experience in natural gas operations. Last ten years in management position. Available immediately. Details and resume upon request. Married, 3 children, age 44. 1925.

Manager—20 years' experience in managing and operating utility properties. Interested in affiliating with a natural gas company. Good public and employee relations man. College graduate, married, two children. Details upon request. 1926.

Sales Engineer—individual with 25 years' supervisory experience with major gas company desires sales or operational position with gas company or company associated with gas industry. Outstanding record in gas air conditioning, gas utilization, measurement, odorization and general operations. 1928.

Manager or Superintendent—12 years' broad practical background in management of medium sized natural gas property. Experience includes direction of: construction, maintenance, sales, customer service work, measurement, regulation, utilization, and related office administration. Desires permanent position with company requiring above experience. Can competently manage medium sized property or head department in large company. Will relocate. Married, age 34. 1929.

Manufacturer and Utility Company Sales Representative—associated over a year as representative for a water heater manufacturer. Successful obtaining dealer acceptance. Familiar with dealer promotion plans of various utilities. Nine years' sales experience with

leading gas utility. Thoroughly experienced in preparing heat loss surveys and selling gas heat. Assisted in supervising a successful sales incentive program for company employees. Married, veteran, details upon request. 1930.

Market Research Director—Eight years' experience in sales analysis, sales control and market studies. BS in business administration and MBA in Market Research. Married, children, age 34. 1931.

Young Executive—BS, MA, PhD in Industrial Management seeks responsible position in industrial relations. College teacher for 7 years, management consultant and arbitrator for 7 years, and management consultant and arbitrator for 4 years. Have handled profit-sharing plans, job evaluation, morale studies, managerial development program, and some contract negotiation. Current salary, \$8,000. Detailed resume on request. 1932.

POSITIONS OPEN

Sales Manager—competent individual to manage builders division of large southeast Pennsylvania utility. Experience must include knowledge of characteristics of domestic appliances, ability to formulate promotional programs and sales presentations. 0865.

Engineer—for natural gas distribution company, central New York. Generous employee benefits. Individual with ability will be given increasing responsibility, commensurate salary. Work will permit broad experience in other phases of public utility work in addition to gas distribution. Previous work in distribution and LP-Gas operation desirable. Reply stating experience, salary, and personal background. 0866.

Mechanical Engineer Graduate—with initiative and ability to design and develop industrial gas and oil burners; at least 4 years' similar experience required; excellent opportunity to grow with Middle Atlantic states organization. Replies confidential. Our organization knows of this advertisement. Send full resume of education, experience and salary requirements. 0867.

Project Field Engineer—preferably with experience building propane plants, gas piping, etc. Liberal salary and living expenses to qualified man. Submit resume and references. 0868.

Project Engineer—immediate assignment to last 1½ to 2 years for construction of 200 miles of natural gas pipeline in Middle East. Attractive compensation. Send biographical data and complete resume of education and experience including salary received and reference. 0871.

Gas Property Manager—nationwide company has opening in New England for progressive sales minded manager for manufactured and bottled gas utility serving a community of approximately 35,000. Submit complete resume of experience. 0872.

Nominations

(Continued from page 8)

For vice-chairman—C. H. MANN, treasurer, Columbia Gas System Service Corp., New York, N. Y.

GENERAL MANAGEMENT SECTION

For chairman—MARVIN CHANDLER, president, Northern Illinois Gas Co., Aurora, Ill.

For vice-chairman—OTTO W. MANZ JR., executive vice president, Consolidated Edison Co. of N. Y., New York, N. Y.

INDUSTRIAL, COMMERCIAL GAS SECTION

For chairman—F. THOMPSON BROOKS, sales manager, industrial sales department, Philadelphia Electric Co., Philadelphia, Pa.

For vice-chairman—FRED A. KAISER, vice president

and general sales manager, Michigan Consolidated Gas Co., Detroit, Mich.

OPERATING SECTION

For chairman—HERBERT C. JONES, gas engineer, New England Electric System (Gas Division), Malden, Mass.

For vice-chairman—J. T. INNIS, vice president, Northern Natural Gas Co., Omaha, Neb.

For second vice-chairman—SAMUEL W. HORSFIELD, vice president i/c gas operations, Long Island Lighting Co., Garden City, N. Y.

RESIDENTIAL GAS SECTION

For chairman—THOMAS H. EVANS, vice president i/c of sales, Equitable Gas Co., Pittsburgh, Pa.

For vice-chairman—H. WILLIAM DOERING, manager, heating department, Springfield Gas Light Co., Springfield, Mass.

A.G.A. advisory council

E. R. ACKER.....Poughkeepsie, N. Y.
B. C. ADAMS.....Kansas City, Mo.
F. M. BANKS.....Los Angeles, Calif.
L. L. BAXTER.....Fayetteville, Ark.
LESLIE A. BRANDT.....Chicago, Ill.
DUDLEY B. W. BROWN...New York, N. Y.
WENDELL C. DAVIS.....Chicago, Ill.
J. ROBERT DELANEY....Cincinnati, Ohio
J. F. DONNELLY SR.....Milwaukee, Wis.
E. H. EACKER.....Boston, Mass.
W. M. ELMER.....Owensboro, Ky.
N. HENRY GELLERT.....Seattle, Wash.
ELISHA GRAY II.....St. Joseph, Mich.
LYLE C. HARVEY.....Syracuse, N. Y.
FREDERIC O. HESS.....Dresher, Pa.
J. E. HEYKE.....Brooklyn, N. Y.
J. K. HORTON.....Calgary, Alta.
OSKAR L. JONES.....Toronto, Ont.
D. E. KARN.....Jackson, Mich.
PAUL KAYSER.....El Paso, Texas
GROVE LAWRENCE.....Los Angeles, Calif.
WISTER H. LIGON.....Nashville, Tenn.
A. W. LUNDSTRUM.....Columbus, Ohio
WILLIAM G. MAGUIRE...New York, N. Y.
N. H. MALLON.....Dallas, Texas
DEAN H. MITCHELL.....Hammond, Ind.
W. E. MUELLER...Colorado Springs, Colo.
GERALD T. MULLIN...Minneapolis, Minn.
E. A. NORMAN.....Columbus, Ohio
F. T. PARKS.....Denver, Colo.
L. B. RICHARDS.....Harrisburg, Pa.
W. F. ROCKWELL JR.....Pittsburgh, Pa.
FRANK C. SMITH.....Houston, Texas
E. CARL SORBY.....Rockford, Ill.
N. R. SUTHERLAND...San Francisco, Calif.
W. D. SWEETMAN.....Chicago, Ill.
R. G. TABER.....Atlanta, Ga.
GEORGE E. WHITWELL...Philadelphia, Pa.
W. D. WILLIAMS.....Asbury Park, N. J.
CHARLES G. YOUNG...Springfield, Mass.

FAIR COMMITTEE

Chairman—Wister H. Ligon, Nashville Gas Co., Nashville, Tenn.

General Promotional Planning Committee

Chairman—Charles G. Barndt, Lone Star Gas Co., Dallas, Texas.

General Research Planning Committee

Chairman—E. H. Smoker, United Gas Improvement Co., Philadelphia, Pa.

General Public Information Planning Committee

Chairman—Thomas H. Evans, Equitable Gas Co., Pittsburgh, Pa.

FINANCE COMMITTEE

Chairman—E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

LABORATORIES MANAGING COMMITTEE

Chairman—N. B. Bertolette, The Hartford Gas Co., Hartford, Conn.

APPROVAL REQUIREMENTS COMMITTEE

Chairman—H. B. Noyes, Washington Gas Light Co., Washington, D. C.

Associated organizations

GAS APPLIANCE MANUFACTURERS ASSOCIATION

Pres.—Clifford V. Coons, Rheem Manufacturing Co., New York, N. Y.
Man. Dir.—Harold Massey, 60 East 42nd St., New York 17, N. Y.

CANADIAN GAS ASSOCIATION

Pres.—Henry L. Purdy, British Columbia Electric Co., Ltd., Vancouver 1, B. C.
Man. Dir.—W. H. Dalton, 2532 Yonge St., Toronto, Ontario.

FLORIDA-GEORGIA GAS ASSOCIATION

Chrmn.—Walter T. Napier, Jacksonville Gas Corp., P.O. Box 330, Jacksonville, Fla.
Sec.-Tr.—L. A. Friederich, Tampa Gas Co., P.O. Box 2562, Tampa, Fla.

ILLINOIS PUBLIC UTILITIES ASSOCIATION

Sec.-Tr.—A. Schlink, Central Illinois Light Co., 316 South Jefferson Ave., Peoria, Ill.

INDIANA GAS ASSOCIATION

Pres.—V. C. Seiter, Citizens Gas & Coke Utility, Indianapolis, Ind.
Sec.-Tr.—R. A. Steele, Citizens Gas & Coke Utility, 2020 N. Meridian St., Indianapolis, Ind.

THE MARYLAND UTILITIES ASSOCIATION

Pres.—Robert C. Carder, Potomac Edison Co., Hagerstown, Md.
Sec.—Robert L. Smith, 203 West Second St., Frederick, Md.

MICHIGAN GAS ASSOCIATION

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